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Some important changes in plan and arrangement have been made in this edition. I desire it to be understood that it embodies my personal experience and opinions in relation to a large number of subjects which I have had special opportunities of studying; as well as a considerable summary of many years' professorial and clinical teaching. Of course in other cases I thankfully acknowledge my indebtedness to those whose writings, founded on special knowledge, have afforded me the necessary information. My aim has been to make the work as complete and practically useful as its unavoidable limitations permit. Many subjects have been dealt with much more fully than in previous editions; and several are now discussed for the first time.

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An Introductory Address
ON
SCIENTIFIC RESEARCH IN MEDICINE.

Delivered at the Opening of the Session at the London School of Tropical Medicine on Oct. 2nd, 1905,

BY GEORGE H. F. NUTTALL, M.A., M.D., PH.D., F.R.S.,
UNIVERSITY LECTURER ON BACTERIOLOGY AND PREVENTIVE MEDICINE, CAMBRIDGE.

GENTLEMEN,—It is a pleasure and an honour for me to address you at the opening meeting of your nineteenth session and I thank you for giving me the opportunity. Coming from Cambridge, where the importance of tropical medicine has been fully recognised by the institution of a University Diploma in Tropical Medicine and Hygiene, I feel that this an occasion which can but strengthen the bonds that unite us in the desire to further our common object. I have chosen as a subject for to-day's address "Scientific Research in Medicine," for my own work has been mainly connected with research.

RESEARCH: ITS AIMS AND REWARDS.

That great benefits to mankind have followed the discoveries of recent years is obvious to all of us, especially with regard to the causes and prevention of yellow fever and malaria, and the results already obtained give abundant promise of the good that may follow from like researches in the future. Research is a word we hear on all sides to-day. It is the enemy of mere *authority*, that tyrannous spirit which has hampered progress and retarded the advance of scientific medicine for centuries. The spirit of research is restless of restraint; it chafes at limits; it leads us ever onward to new questionings and new discoveries, and these in turn lead on to further inquiries. The spirit of research has come to stay with us as long as the hope and the desire of progress, in any domain of human knowledge, continue to stir the minds of men.

Experimental medicine is responsible for the greatest advances which have been made in our knowledge of the cause, prevention, and cure of disease. These advances have been based on the labours of many workers, exploring often along different lines. Most important discoveries have exerted but a slight direct effect at their inception; their full significance has remained hidden, except perhaps to the few and far-seeing. Of such discoveries the majority have been made by those engaged in research in the realms of pure science and rarely by those guided by principles of direct and immediate utility. Pure science is in this respect unselfish; its aim is not profit but truth; it makes for light rather than for gain. Yet it is the forerunner of that applied science which is more obtrusively the servant of man. Its guiding principle is that knowledge must be sought for its own sake and not primarily for its possible or probable applications. And experience has shown that new and fruit-bearing knowledge is seldom revealed to those whose sole purpose is merely utilitarian. Problems of the greatest importance to humanity are awaiting their solution at the hands of those who are willing to labour thus unselfishly, to devote themselves to science for the sake of science, and not for that of the material service which science can be made to yield. If we study disease we must study it for the sake of knowledge; the scientific spirit must enter into our work. Devotion to the study, actuated by such motives, is certain to bring its reward, although the reward may not be material. It seems scarcely necessary to dwell on this before an audience composed chiefly of men belonging to the medical profession, which of all professions is the most unselfish. All that can be asked is that those who devote themselves to advancing the science of medicine shall bring to their work the same noble motives which guide the ideal physician in his efforts to alleviate the sufferings of his fellow men. The spirit of commercialism should be as foreign to the man of science as it is to the physician, for both should be idealists in the best sense of the word. The fruits of their labours may be gathered by others but none can rob them of the joy of having brought them forth. The "practical man" may not appreciate such ideals; he may deride those who cherish them but he is ever ready to use the discoveries of science for his own ends. The reward of the true pioneer does not lie in what is said by "the fool multitude who choose by show"; he seeks only "the wages of going on"; he finds his recompense in delving into the wonderland of nature with all its hidden beauties, and thereby forgetting the smallness that enters into all men's lives. And there is no meanness in the exultation of the explorer when a new peak rises on his view, of the searcher of the skies "when a new planet swims into his ken." The joy of the hunter at the kill is felt by the scientific worker when a fact which has hitherto escaped observation rewards his patient search for truth.

Research has also its joys in the ever-changing picture that it brings before us; the phenomena we study fascinate through their very elusiveness. We must be prepared for many disappointments and much labour lost; we must be ready to give up much of the old if we wish to grasp the new. We must grow with our growing knowledge, *per ampliora ad altiora*. We must emulate the "Chambered Nautilus":—

> "Year after year beheld the silent toil
> That spread his lustrous coil;
> Still, as the spiral grew,
> He left the past year's dwelling for the new,
> Stole with soft step its shining archway through,
> Built up its idle door,
> Stretched in his last found home, and knew the old no more."
> —*O. W. Holmes.*

We are not all born with instincts fitted for research, but there are many in whom the talent for investigation lies dormant and unused. It should be one of the functions of educational institutions to detect such men and to lead them on to do the work for which they are adapted, to place the torch within the grasp of hands that are fit to bear it onwards.

ENDOWMENT OF RESEARCH NEEDED.

All who are engaged in teaching and research have met with men such as those to whom I have alluded, and often with regret have been forced to see them drift away into other fields of activity, too often from mere lack of means to offer them encouragement. In this country we constantly see men abandon research for practice, though it is all too obvious that, in the interests of science, we cannot afford to lose them. In such cases the distinction attained by research is used but as a stepping-stone to positions which shall secure a means of livelihood. To carry on research successfully a man needs an assured income so that his mind may be at peace with regard to his material wants. How little encouragement is needed to bring forth such men is seen to-day in many parts of the world. I need scarcely remind you of the devotion to work for its own sake exhibited by such men as Lazear, Myers, Dutton, Plehn, and others who have sacrificed their lives in the study of tropical medicine. These men consciously risked their lives in their devotion to science, they sacrificed themselves for humanity, and there are many who are prepared to follow in their footsteps. Is it possible that those who are able and willing to help on human progress can continue to ignore the devotion and self-sacrifice which such men are all too ready to render to their fellow men? We should do all in our power to bring the need in this respect before the educated public, in whose mind there still exists no proper understanding of the material conditions which render scientific research and discovery possible. The average man is scarcely interested in *how* discoveries are made, provided that they *are* made, but an appeal to him based on grounds of public benefit may meet with success, and such an appeal is justified by what has been accomplished.

The needs of experimental medicine are so great and urgent that every means short of the undignified should be taken to bring the matter forcibly before the public, which in this country does so much for charity, so pitiably little for the advancement of learning. Medical research needs endowment. For those who are willing to devote their lives to research, means of subsistence should be found in the interest of the public good. In the regrettable absence of State aid we are forced to appeal to the intelligent public, proving again and again that we need help and still more help, and that we are worthy to receive it at their hands. In this appeal all medical men should join. The wealthy classes of this country would do well to imitate their brethren in America, where, though the State does much more for learning, private beneficence has nevertheless come

to the fore in splendid fashion, endowing universities, institutes, and laboratories in a truly regal manner. It is high time that medical science should become a more favoured object of benevolence in this country.

OUR LABORATORIES AND TEACHERS.

In an address delivered by my friend, Professor W. H. Welch of Johns Hopkins University, some nine years ago he said: "At the present day no country, no university, no medical school can hold even a respectable place in the march of education and progress unless it is provided with suitable laboratories for scientific work." Laboratories are the workshops of those who engage in research, although there are some in which much routine work is done and original research is neglected. Laboratory work alone does not constitute research. Laboratories should be thoroughly equipped and guided by men of capacity, by well-trained teachers and investigators who can give their whole time to the work, not by men "deep versed in books and shallow in themselves." The teachers should be men capable of fostering the scientific spirit in medicine and of training the students under them in objective methods. For this purpose the best teachers are unquestionably those who are also investigators but to fulfil both the functions of teacher and investigator requires so much time that it is almost impossible to perform many other duties. A non-investigator may cram his students excellently for such purposes as examinations but he will not stimulate his men to progress in independent thought and work. To teach science as it should be taught in properly equipped and organised institutions is far more expensive in the case of medicine than in that of any other professional school; and this is the reason why support is so much required—pure science does not pay for the material needs of those who cultivate it.

In former times our needs were fewer, but it no longer holds true that "what was good enough of old is good enough yet." The result of clinging to the old traditions has brought about an untenable position amongst science teachers in this country. In many of our institutions one man is often expected to perform duties which in more enlightened Germany are allotted to two, three, or even more teachers, each provided at least with a living wage, apart from the necessary support given for their laboratories. Most teachers of science in this country receive pittances of which few are sufficient, many totally inadequate. The same holds for many of our laboratories which remain ill provided with the means of making use of the costly bricks and mortar of which in some cases they are constructed. I know of cases where even university teachers have to sacrifice a large share of their insufficient salary in carrying on the work of research in their laboratories. It does not suffice to *build* laboratories; they must also be provided with sufficient funds and equipment to enable them to become working entities. In brief, we need living laboratories; we must see that the teacher is supported in a manner commensurate with his functions, and that aid, however modest, is found for such students as show a marked talent for research.

I have cited conditions in Germany as an instance of what is done in a neighbouring country by a "paternal Government." A closer study of these conditions should certainly tend to ruffle the national pride of an Englishman. Take a single instance with which I am especially familiar—the hygienic laboratories. In May of this year the new Hygienic Institute of the University of Berlin was opened. The building, which contains all modern appliances, was constructed at a cost of £35,000. Ten years ago the institute received £925 per annum for current expenses; this year the *état* has been brought up to £1750 per annum; this apart from the salaries to the teaching body and apart from grants for special investigations. Every German university and most towns of importance are provided with hygienic institutes, all, as far as practicable, supplied with means adequate to enable them to perform their useful functions. Even in poverty-stricken Italy practically every university is provided with a hygienic institute which serves, as in Germany, as an active centre for research and teaching. Compare this with what is found in this country. There are hygienic laboratories in Edinburgh and Manchester which may modestly compare with some of the institutions abroad. Take Oxford and Cambridge, our oldest universities, and we see that no provision exists for research or even proper teaching in hygiene. It seems inconceivable to outsiders that these universities are poor and cannot found new institutions and that there are other and perhaps more pressing needs. All I can say, in the words of a talkative Irish patient whom I knew: "Poverty is no disgrace but it is mighty unhandy," and we must continue to hope for better days. We in Cambridge are earnestly hoping that a helping hand may soon be extended to the relief of a condition which cannot persist.

THE LONDON SCHOOL OF TROPICAL MEDICINE AND ITS STUDENTS.

Those of us who have watched the progress of this school from its inception have witnessed a struggle upward which is worthy of all praise and felicitation. This and the sister institution in Liverpool are known throughout the world for the excellent work accomplished by the members of the teaching staff and some of the students they have sent forth. Your school has a great mission to fulfil. It has to train men in the methods they will be called on to employ in many parts of the world and to give them the latest and the best to take with them on their distant journeys. The amount crowded into your courses already shows the rapidly increasing importance of the subjects treated and the need, some day in the future, of making certain modifications in the plan of study so as to relieve the increasing burden on the teacher and student.

It is to be hoped that the public will second the noble efforts which you have made to establish a centre for the study of the diseases which affect the inhabitants of the tropical countries of this vast empire. You have already made your influence felt throughout the world, for the men trained within these walls are constantly being distributed over the empire and occupy places where they will continue to transmit the stimulus which radiates from this institution. We are at length beginning to see the dawn of better days, when we ourselves can supply men to solve the great problems which it is our duty to investigate without calling in, as heretofore, the men whom Germany and France have trained and lent us in our helplessness.

> "How many things by season season'd are
> To their right praise, and true perfection!"
> —*Merchant of Venice*, Act V., Scene 1.

There is much for us to do before we reach "perfection" and we must continue to strive onward and upward. I should like to see some means devised, for instance, in this school, to maintain a form of union between those who have enjoyed the opportunity of studying in its laboratories, to see arise a feeling of corporate attachment between the institution and those who have passed through its portals. This might be accomplished by the publication of a Bulletin or the like which would serve to keep the men in touch with each other and with their teachers after they have left the school. The school, for its part, would surely benefit by fostering the ties which unite it with its former students. The grown-up sons who are out in the world would be encouraged to remember, and on occasion to support and to assist, their *alma mater*.

The examination which we have instituted at Cambridge cannot fail to react upon the schools where tropical medicine is taught in the direction of broadening and deepening the knowledge imparted to those destined to present themselves as candidates. For instance, it has already become obvious to us that the subjects of tropical hygiene and bacteriology require more attention than they have received at the hands of those desiring to attain to our diploma. It is fully recognised that there are difficulties in the way of lengthening the curriculum or of increasing the amount of study in the period which is at present allowed for the courses in tropical medicine. But it is obvious that some gain might result from a stricter choice of subject matter. The study of tropical medicine has often been referred to as a special study, but it embraces a very wide range of knowledge and in practice is constantly spreading into the realm of general medicine. To have a sound knowledge of tropical medicine presupposes as good a knowledge of general medicine. It follows that those who turn to the study of tropical medicine should do so on a basis of sound general knowledge.

The necessity of giving as much *practical* instruction as possible is obvious to us all in an institution such as this. Men can take books with them to the tropics but they rely on their practical training for methods. To put a cookery-book in the hands of a woman who cannot distinguish between pepper and salt would be to court disaster. Instruction in general principles will make it clear that methods

are not stereotyped; they are but aids to obtaining a result; they must be varied according to conditions, and new methods must be evolved to meet unexpected difficulties. That is where the untrained man breaks down: in face of a new situation he cannot go beyond his book. If he has not learned in the laboratory how methods are evolved and adapted to particular problems as they arise he is helpless and barren. He has "no root in himself."

It would be well to sound a warning to young workers as to the value of good methods and thoroughness in work, to counsel patience in research, to emphasise the wisdom of avoiding the tendency to undue haste in publication, and to ridicule the love of publicity and advertisement that has seized upon some of our brethren at home and abroad. These failings discredit not only scientific men but science itself, for they lead to over-hasty and unwarranted generalisations and to the premature application of discoveries that are but half-born. A carelessly worked-out contribution to science, even though it be but a maiden effort, often throws discredit on the good work which a man may do in after years. This damaging result is often risked in the struggle for recognition, but the penalty is sure, for it is at least as difficult to recover a reputation in science as it is in morals. If some seem inclined to deprive others of their due by loud trumpeting and "pushfulness" let us not be of them; reputations so achieved have no enduring quality. At the same time, it would be well if those holding established positions did all in their power to assure just recognition of the work done by younger men. To win the praise of the masters should be the ambition and the attainable reward of the aspirant. Finally, well-trained men when intrusted with investigations or sent out on expeditions should not be burdened with too many instructions from committees and the like, composed frequently of well-intentioned gentlemen at home who scarcely understand the conditions at the front. We speak of fair play in sport; let us see that there is more fair play in science.

THE TREND OF RECENT INVESTIGATION.

A survey of recent work in tropical medicine shows us that investigation is chiefly being directed to the study of protozoal diseases. No advances of fundamental importance have been made with regard to malaria since the classical investigations were published with which the names of Ross and Manson, Grassi, Bignami, and Bastianelli will ever remain associated. The earlier work has been confirmed and extended by many investigators. The prevention of malaria by means of mosquito destruction and other measures directed against mosquitoes has been tried in various localities, in some instances with success, in others with doubtful results. This is, however, only what might be expected in view of the diversified difficulties which must necessarily arise. Such difficulties must be met and overcome by ripening experience. There has been a veritable flood of malaria literature of recent years, including an annual volume of "Atti della Società per gli Studi della Malaria," the series commencing in 1900, which has come to us from Italy. Mosquitoes have received an immense amount of attention after being much neglected in the past. The number of genera and species and their classification have become subjects to bewilder all but specialists.

The important discoveries on sleeping sickness ushered in by the researches of Castellani, a pupil of this school, have been confirmed and extended by Bruce and his collaborators of the Sleeping Sickness Commission. The relation of the flies belonging to the genus Glossina to the transmission of the trypanosomes is being actively studied and many important questions we must hope are nearing their solution in connexion with this most fatal malady. A contribution has just come to hand from Gray and Tulloch with regard to the multiplication of the parasites in Glossina, indicating that the belief recently expressed is warranted—namely, that the parasites undergo a cycle of development within the insects. Of importance in their bearing on the question of the development of trypanosomes in other than their vertebrate hosts are the investigations of Schaudinn on Trypanosoma noctuæ in Culex, those of Brumpt on certain trypanosomes of fishes which undergo their cycle of development in leeches, and those of Prowazeck on the rat trypanosome which he has demonstrated undergoes development in the rat louse (Hæmatopinus spinulosus).

Of recent discoveries the one which to me appears to carry the greatest weight is that of Novy and McNeal. They have been the first to obtain pure cultures of protozoa, maintaining trypanosomes of different species alive *in vitro* for many generations. There is no telling whither the methods they have given us may lead; they directly stimulated Leonard Rogers to experiments wherein he succeeded, by an ingenious method of his own, in cultivating another protozoon, the Leishmania, obtained from cases of kala-azar.

The work on the tick-transmitted diseases known as the piroplasmoses (redwater fever, &c.), occurring in cattle, sheep, horses, and dogs, has been pursued in various parts of the world with great activity. The results appear to me to indicate, what I believe also holds for human malaria parasites, that we shall in time learn to distinguish different parasites which we at present consider to represent single species.

Towards the end of last year the presence of spirochætæ in the blood of persons suffering from "tick fever" was demonstrated by Philip Ross and Milne in Uganda. The investigations of Dutton and Todd on tick fever in the Congo Free State, announced in February, have given scientific proof that this disease is transmitted by a tick (Ornithodoros moubata) after it has infected itself with blood containing the spirochætæ. This has been confirmed by Koch, if we may rely on what has appeared recently in German newspapers. It is, however, quite premature to assume that African tick fever and European relapsing fever are due to one and the same species of spirochæta; in fact, it is highly probable that this is not the case, although the report in question refers to the spirochætæ as one species. In relapsing fever in Europe the bedbug (Cimex) has long been suspected to be a carrier of the infective agent, a probability which was considerably heightened by Karlinski's observation of motile spirochætæ in the bodies of the insects up to 30 days after they had fed on relapsing fever blood. Schaudinn, moreover, informs me that he has observed the multiplication of the Spirochæta Obermeieri in Cimex. These observations, following closely upon those published by Marchoux and Salimbeni, are of greatest interest and practical import. The last-named authors demonstrated that a fatal disease of the fowl in Brazil is due to a spirochæta which is transmitted through the agency of a tick (Argas miniatus), and this is capable of conveying the disease even six months after feeding on infected blood. These spirochætæ multiply in the tick and are present in large quantities in its body cavity throughout this period. These observations are very suggestive, since they demonstrate the long persistence of the parasites in their carriers and render it probable that they will be found to be harboured much longer. Finally, the finding this year of Spirochæta pallida in syphilis by Schaudinn and others in man, and by Metchnikoff and Roux in experimentally infected apes cannot escape a passing notice, even though the disease is unfortunately not confined to the tropics.

It is of some interest to note that the close blood relationship existing between the apes and man, demonstrated independently by means of the precipitins by Grünbaum and myself, served as a direct incentive for the experiments of Metchnikoff and Roux, Lassar, and Neisser, which proved that human syphilis is communicable to the chimpanzee and orang-outang.

Of interest also has been the further discovery this year of a number of new protozoal parasites in the blood of different animals, in addition to numerous new species of trypanosoma. I refer to new forms called "Leucocytozoa," because they inhabit the white blood corpuscles of their vertebrate hosts. Leucocytozoa were first discovered by Bentley in dogs in India and were described, without sufficient mention of this fact, by James. Another species has been found by A. Balfour in the rat (Mus decumanus) in Khartoum; and lastly, W. S. Patton informs me that he has found a species in the squirrel (Sciurus palmarum) in India, and apparently observed developmental forms thereof in a louse. Balfour has moreover described a new hæmogregarine occurring in the jerboa (Jaculus jaculus) and Graham-Smith in our laboratory has found another new endoglobular parasite in the mole. This by no means exhausts the "finds" of this year but it will suffice to show that British workers are doing their share in furthering our knowledge in this regard.

Of the diseases due to vermes I can say but little. The discovery of Catto's Schistosomum in this laboratory is familiar to you all. It is interesting to note, following on the experiments with Ankylostoma duodenale by Looss, proving that the embryo worm can infect by penetrating through the skin, that Boycott in London, and Tenholt in Germany have confirmed the fact this year in two experiments conducted on medical men who volunteered for the purpose.

"Again, it is apparent that the subject of immunity in relation to protozoal diseases is proving to be one of great difficulty and the results hitherto obtained indicate that new methods will have to be devised if the problem is to be solved from a practical and still more so from a scientific standpoint. It is also obvious in this connexion that the problems before us can only be solved by animal experiment, and this accentuates the need of our giving an increasing amount of attention to comparative pathology as we push on toward the alleviation of the ills to which our own flesh is heir.

I must apologise, gentlemen, for the very sketchy nature of the *résumé* which I have just given you. There are many matters left untouched, including even such important diseases as yellow fever and Malta fever, on which active work has been done. My object has been to seize upon a few salient facts with a view to show how much has been accomplished within a short period and how great are the opportunities of the workers in this school who are destined to labour in new fields in different parts of the world. Perhaps what I have said—in no spirit of presumption—will serve as an incentive to some of my hearers. Let me conclude with some wise words from the Talmud: "The day is short and the work is great. It is not incumbent upon thee to complete the work, but thou must not therefore cease from it."

THE PATHOLOGY AND PREVENTION OF SECONDARY PAROTITIS.[1]

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SECONDARY parotitis, though a comparatively rare affection, has always attracted a certain amount of attention clinically on account of the varying circumstances in which it arises, the special symptoms which it presents, and the serious consequences which it may occasion. Its pathology, however, has proved of even greater interest on account of its obscurity; much discussion has centred round it, and various different theories have been advanced to explain its origin, but it still remains a subject for speculation. Thus in the current text-books various different theories of origin are mentioned side by side on a more or less equal footing; and if any choice is made in English works on the subject the theory advocated is the one put forward by Paget, who regarded the affection as a "sympathetic inflammation." On the continent, however, the theory of Hanau and Pilliet, who regarded secondary parotitis as due to the infection of Stenson's duct with micro-organisms from the mouth, is more commonly accepted.

The object of the following paper is to collect all the evidence that has been published in favour of Hanau and Pilliet's theory and also to bring forward additional evidence in support of it. It is hoped that by doing so it will be possible to show that secondary parotitis is invariably due to the direct infection of Stenson's duct with micro-organisms from the mouth—a conclusion of some importance since it leads to the suggestion that secondary parotitis may invariably be prevented from occurring for the following reasons:—(1) It has been shown by experiment that the parotid duct in animals can only be infected if certain conditions predisposing to infection are present; and (2) it can be shown that the same predisposing conditions are present in all cases of secondary parotitis in man and that they may be avoided. It is probable, therefore, that by preventing these conditions, in those cases in which secondary parotitis is liable to occur, its onset may be invariably avoided. The importance of such a possibility is more evident when it is borne in mind that secondary parotitis is occasionally a fatal disease on its own account, and that it even more frequently leads to death in an indirect manner by adding to the grave symptoms of the primary disorder already present.

As, however, the theory of origin now advocated is not the most generally accepted one in this country it will render the subject more complete if the claims of the various other theories are submitted to criticism before the evidence in favour of duct infection is examined. Moreover, for purposes of reference it will be more convenient, in dealing with the various theories to begin by giving a brief summary of the chief features of secondary parotitis and the circumstances in which it arises.

The brief account now given is based on a personal examination of 12 cases and a study of the published records of over 200 others. The subsequent critical survey of the pathology of the affection is based on an examination of evidence derived from three sources: (1) a study of all the actual pathological facts previously published; (2) an examination of the morbid anatomy and bacteriology of six successive cases; and (3) a study of certain facts in connexion with the causes which lead to infection of the parotid duct which have been established by experiment.

I. FEATURES OF SECONDARY PAROTITIS.

Secondary parotitis is an acute inflammatory affection of the parotid gland which is characterised and distinguished from primary parotitis or mumps in three ways: (1) it invariably occurs as a complication during the course of some other affection; (2) it is not contagious; and (3) it not infrequently suppurates and gives rise to a parotid abscess.

1. *The Circumstances in which Secondary Parotitis Arises.*

A study of a large number of cases shows that secondary parotitis has been met with during the course of a large number of different affections, which may be grouped under three headings, as follows: (*a*) acute diseases; (*b*) chronic diseases; and (*c*) post-operative states.

(*a*) The acute diseases during the course of which parotitis has occurred may be arranged as follows: (1) typhus fever; (2) enteric fever; (3) scarlet fever; (4) diphtheria; (5) pneumonia; (6) appendicitis, salpingitis, and acute pelvic and peritoneal inflammations of all kinds; and (7) cystitis and pyelonephritis. Of these, typhus fever, when it occurs, is most frequently complicated by parotitis. Keen, in the Toner lecture, having collected nearly 200 examples. At the present time, however, parotitis is usually met with during the course of enteric fever, pneumonia, and the different varieties of peritonitis.

(*b*) The chronic diseases are far less frequently followed by parotitis than the acute ones. They include: (1) diabetes; (2) mercurial stomatitis; (3) iodism and plumbism; (4) general paralysis of the insane; (5) any form of grave asthenia; and (6) disorders of menstruation.

(*c*) The operations followed by parotitis have almost invariably been operations on the abdomen and particularly operations on the pelvic organs. Many of them have been undertaken for septic disorders and others have become septic during the performance of the operation. A certain proportion, on the other hand, have run an aseptic course from start to finish. Together they include: (1) exploratory laparotomy; (2) gastrotomy, gastrostomy, gastro-enterostomy and other operations on the stomach and pylorus; (3) enterectomy; (4) colotomy; (5) for radical cure and strangulation of all kinds; (6) for appendicitis and other forms of peritonitis; (7) ovariotomy and operations on the tubes and uterus; (8) renal operations; and (9) operations on the liver and bile passages. Of these operations, those in which sepsis has been present have been far more frequently followed by secondary parotitis than the aseptic ones; in fact, the only aseptic operation at all frequently followed by parotitis is ovariotomy as practised in former times. This special incidence will be fully explained later when dealing with the theory of origin now advocated.

Time of onset of secondary parotitis.—When occurring during the course of an acute or chronic disease the day of the disease on which secondary parotitis arises is too variable to admit of any classification, for in some instances it has arisen during the first few days, while in others it has not appeared until the period of convalescence has been established. When following operations the date of onset has varied from the second to the thirtieth day, but as a rule parotitis has appeared from the sixth to the eighth day after operation.

2. *Symptoms and Course of Secondary Parotitis.*

The symptoms of secondary parotitis may be divided into *local* and *general*. The disease begins locally with pain and swelling in the parotid region. The pain is aching or shooting in character, at first strictly localised

[1] A paper read before the Royal Medical and Chirurgical Society on Oct. 25th, 1904.

to the parotid and later spreading to other areas supplied by the fifth nerve, such as the side of the head and ear, and often being most acutely felt in the last-named situation. Movement of the jaw becomes painful and impossible, and attempts at movement are liable to cause sudden exacerbations of pain. At first the swelling is usually situated near the centre of the parotid gland. It is firm and tender and in most cases soon extends to the other parts of the gland, so as to give rise to a typical parotid swelling. Very soon the swelling extends to the overlying cheek and adjacent parts, the whole cheek becoming brawny and the eyelids puffy and closed about the fourth day. A little later the lips become swollen and œdematous and the whole side of the face presents a brawny appearance and feels tense. The skin may become hot and red if suppuration is about to occur.

The general symptoms come on almost immediately. They consist of fever, malaise, depression, and thirst. Dryness of the mouth is also a source of discomfort, though it has often been complained of before the parotitis arises. The rise of temperature may be ushered in by a rigor, but this is rare, and as a rule a rise of from one to three degrees occurs and persists. If fever was previously present such a rise may be less evident. Giddiness, tinnitus, and headache due to obstructive congestion of the head and scalp may now be complained of; all the symptoms usually reach their acme about the fourth or fifth day. The swelling may now subside or suppuration may occur. In the former instance the swelling, pain, and discomfort rapidly become less marked, the temperature gradually falls, and complete recovery ensues in about a fortnight. In the event of suppuration occurring, as it does in exactly half the number of recorded cases, the symptoms persist and become worse. The swelling becomes more brawny, red, and œdematous, and softening may occur about its centre. The temperature becomes irregular, the pain lancinating, and rigors may occasionally occur. In a considerable number of instances, however, the actual presence of pus is not easy to determine, for the skin may remain pale, and fluctuation may be absent on account of the fact that the pus lies deeply beneath the tense parotid fascia.

Should pus form, the case may pursue one of several different courses. 1. In the first place, the pus may slowly become absorbed, convalescence being prolonged and recovery slow. 2. Secondly, the pus may find its way into the parotid duct and drain away into the mouth. 3. Thirdly, the abscess may be incised and efficiently opened, in which case gradual healing of the wound usually follows, if operative interference has been sufficiently timely. 4. If left too long the pus may burst into the mouth or less often the external auditory meatus. In either instance it may drain efficiently, but such fortunate results after imperfect treatment are, however, rare, and much more commonly one or other of the following accidents supervenes: (1) The patient may die from septic poisoning without the abscess bursting at all; (2) many sinuses may be formed, and prolonged suppuration, with or without the formation of a parotid fistula, may occur; (3) the pus may burst into the joint of the jaw and destroy it; (4) it may strip up the periosteum and lead to necrosis of the jaw; (5) it may broach the jugular vein as recorded by Smith and Bloxam, the facial artery as mentioned by Bichet, or any other large vessel, giving rise to secondary hæmorrhage; (6) thrombosis of the facial vein, or less frequently the jugular, may lead to embolic pyæmia; (7) the facial nerve may become involved with consequent facial paralysis which may be temporary or permanent; (8) the abscess may burrow into the middle ear or extend down the neck to the mediastinum; and (9) dyspnœa and dysphagia may be present if the abscess should fail to burst, owing to pressure on the larynx or pharynx.

Course and termination.—The mild cases all end in complete recovery, provided that the primary disease is not fatal, the most frequent sequel being facial paralysis. If pus form the result depends on the treatment adopted, for if the abscess be opened early and thoroughly, closure without the formation of a fistula almost invariably occurs in a few days. The frequency of death in neglected cases is difficult to estimate, as some of the fatal symptoms may be due to the primary disease. There is no doubt, however, that a neglected parotitis is a serious and not infrequently a fatal complication, either of itself or by increasing the gravity of the symptoms already present and so preventing recovery. It is probable that in actual practice the milder, non-suppurating cases are far more frequent than published statistics tend to show, for there is a greater tendency, for various reasons, for the suppurative cases to be recorded. Hence the statement that half the recorded cases are of the suppurative type must only be accepted provisionally.

II. THE PATHOLOGY OF SECONDARY PAROTITIS.

Secondary parotitis was first of all regarded as a variety of primary parotitis or mumps. It was very soon noticed, however, that the former was a secondary and non-contagious affection, prone to lead to suppuration, while the latter was a primary disease of a contagious nature which never suppurated. It was consequently recognised that secondary parotitis must have a separate pathology of its own and various different theories were put forward to explain its origin. This will now be considered in order.

1. *The Pyæmic or Embolic Theory.*

When secondary parotitis was first recognised it was thought that it always occurred during the course of septic affections and it was consequently regarded as a pyæmic phenomenon due to embolism of the parotid vessels, with septic clots derived from the primary focus of disease. It was soon shown, however, that there were two objections to this theory: (*a*) Secondary parotitis was found to occur in cases in which no septic element was present and in which septic thrombosis and embolism could not be supposed to occur. (*b*) Even in those cases in which the primary disease was of a septic nature post-mortem examination failed to demonstrate septic thrombi in the area of primary disease and evidence of septic embolism in other parts was also absent.

In the rare instances of true embolic pyæmia, on the other hand, in which the parotid becomes the seat of an embolic abscess many other organs are similarly affected and the parotid is one of the last to be attacked. More recently the question of embolic origin has been definitely proved to be incorrect, for it has been shown by microscopic examination that the conditions present are different in secondary parotitis and in parotitis of pyæmic origin. In the former instance the process of inflammation begins around the ducts in the centres of the lobules and, moreover, many lobules are simultaneously affected. In the latter the inflammation begins around the arteries which run in the perilobular tissue and the inflamed mass is a single one, involving the area of gland tissue supplied by the particular vessel which has become blocked with septic clot.

2. *The Heat Degeneration Theory.*

Liebermeister regarded secondary parotitis as a parenchymatous degeneration due to hyperpyrexia, but the want of relationship between the occurrence of parotitis and the presence of a really high temperature, or indeed any fever at all in some cases, soon led to this theory being abandoned.

3. *The Toxin Excretion Theory.*

Bouchard next advanced the view that the parotid gland tissue became affected during an ineffectual attempt on the part of the gland to excrete the toxins manufactured by the organisms giving rise to the primary disease. He quoted a "critical flow" of saliva as an example of the successful excretion of toxins, but his theory gained very little acceptance, for it was found that secondary parotitis was prone to occur during the course of diseases in which toxæmia was absent.

4. *The Sympathetic Theory.*

The next theory brought forward is apparently the most widely accepted one in this country at the present day. It was suggested by Stephen Paget after a study of the clinical features of a large number of cases. The theory is based on the fact that many of the cases of parotitis, and especially of the older ones, occurred during the course of diseases of, or after operations on, the ovaries, prostate, testicles, and generative organs of the male and female generally. In view of this special incidence Paget suggested that the inflammation of the parotid was due to the existence of a "sympathetic relationship" between the parotid, on the one hand, and the generative organs, and possibly the peritoneum, on the other. In support of this suggestion he drew attention to the existence of a similar kind of "sympathy" between the same organs when the testicles and ovaries become affected during the course of "mumps."

Against this theory it may be advanced: (1) that all examples of such "sympathetic relationships" and "sympathetic inflammations" in other parts of the body have been proved to be due to infection—as, for instance, the occurrence of orchitis during gonorrhœa or after septic

catheterisation; (2) that in many of the cases of parotitis more recently recorded other parts and organs and not the generative organs have been primarily at fault; and (3) that the great frequency of secondary parotitis after ovariotomy can be more adequately accounted for by the theory of duct infection, as will be shown later.

5. *The Duct Infection Theory.*

The suggestion that secondary parotitis might be due to the direct infection of Stenson's duct with micro-organisms from the mouth was first made by Hanau and Pilliet in 1889. They found on microscopical examination of sections of the parotid (1) that the ducts were choked with débris containing micro-organisms; and (2) that the inflammatory processes present, invariably began around the ducts in the centre of each lobule and only spread later to the periphery of the lobule and the perilobular connective tissue in which the blood-vessels are situated. They concluded, therefore, that secondary parotitis could not be of embolic origin, or else the inflammation would have originated around the vessels, and that the fact that inflammation began simultaneously in the centres of many lobules at once, pointed to an ascending infection of the ducts as the real source of the affection—a conclusion which was further borne out by the actual presence of micro-organisms in the ducts themselves in such cases.

Additional evidence of different kinds has been subsequently brought forward in support of this view.

1. *Microscopic sections* serve to show that in all cases of secondary parotitis the disease pursues the following course: (*a*) The ducts become blocked with débris containing micro-organisms. (*b*) Inflammation first begins in the centre of each lobule around the ducts, and at a point farthest away from the vessels. (*c*) Many lobules are simultaneously affected; they each become centrally necrosed and then, finally, by extension they fuse to form a multilocular abscess cavity.

2. *Bacteriological examination*, first carried out by Girode, has served to prove: (*a*) That several different kinds of organisms may give rise to secondary parotitis, the commonest being the staphylococcus, the next frequent the pneumococcus, and after that the pneumo-bacillus, the typhoid bacillus, the colon bacillus, and the streptococcus; in order of frequency. (*b*) That on taking cultivations from the gland itself, the pus contained in it, the orifice of Stenson's duct, and the oral cavity respectively, the organisms found at each spot are invariably identical in each individual case, a fact which supports the conclusion that the infection of the gland spreads from the mouth *viâ* the duct. (*c*) That the organism giving rise to secondary parotitis is by no means invariably the same as that giving rise to the primary disease during the course of which the attack of parotitis has arisen. Thus, in the cases complicating pneumonia the organism causing parotitis may be the pneumococcus or the staphylococcus; in typhoid fever it may occasionally be the typhoid bacillus but it is much more commonly the staphylococcus or pneumococcus. In embolic parotitis due to pyæmia, on the other hand, the organism in the parotid is invariably identical with that giving rise to the primary disease and the abscesses in other parts of the body.

Microscopical or bacteriological evidence of direct or ascending infection has been brought forward by the following observers: Girode (12 cases), Prantois (two cases), Diaz, Swain, Bosquier, Morley, and Subkovski. Toupet, Testa, Subkovski and Fischel found the pneumococcus in the gland in cases of lobar pneumonia, and Janowski and Lehmann found the typhoid bacillus in cases of enteric fever. Girode, on the other hand, found the staphylococcus to be the cause of the parotid infection in a case of pneumococcus pneumonia, and the pneumo-bacillus to be present in the gland in a case of puerperal septicæmia of streptococcus origin. Various observers, moreover, have shown that parotitis complicating enteric fever is far more frequently due to the staphylococcus than the typhoid bacillus.

As additional evidence in support of the theory of duct infection a brief account of the following six cases of secondary parotitis may be given. The cases form a successive series met with in the course of hospital practice and in each instance a bacteriological or microscopical examination afforded ample evidence that the affection of the parotid was due to an ascending infection of Stenson's duct from the mouth.

CASE 1.—The patient was a man, aged 25 years, who was operated on for an ulcerative perforation of the stomach seven hours after perforation had occurred. In spite of suturing the aperture and cleansing and drainage of the peritoneal cavity peritonitis persisted, and he died with a temperature of 107° F. seven days after operation. He was given no food by the mouth until the third day, when it was tried but not persisted in as it led to vomiting. He was fed only per rectum until the end. The mouth was very foul from the beginning of the illness. On the sixth day the left parotid became painful and swollen to twice its natural size. It was even larger on the ensuing day, when death occurred. The necropsy showed death to be from peritoneal septicæmia; there were no signs of pyæmia. On the sixth day, when parotitis first began, cultivations were taken from the mouth and from the fluid squeezed from the parotid duct. After death cultivations were taken from the cut surface of the affected gland. They all produced a growth of staphylococcus aureus. On section, to the naked eye the parotid was inflamed but no pus was visible. On microscopic

FIG. 1 (CASE 1).

Early stage of secondary parotitis, showing: Duct blocked with débris containing micro-organisms. Inflammatory changes beginning in the gland tissue adjacent to the duct. The blood-vessels unaffected.

FIG. 2 (CASE 1).

More advanced stage of parotitis, showing: Duct, and tissues immediately around it, inflamed and breaking down. Inflammation extending to the remainder of the lobule, but not as yet involving the perilobular tissue in which the vessels run.

section the ducts of some lobules were blocked with granular débris containing micro-organisms. The central portions of the lobules around the ducts were evidently inflamed, the epithelial cells being cloudy and degenerated, and the parts invaded with leucocytes. The periphery of each lobule was practically normal and the interlobular vessels were healthy In some lobules, however, the inflammation had reached the periphery but here it was much less marked than in the centre around the ducts.

CASE 2.—A woman, aged 23 years, with a history of dyspepsia, sustained a perforation of the stomach on March 26th and was brought to hospital on March 29th, when a subdiaphragmatic abscess was opened and drained. Before admission she had vomited continuously and she continued to do so, all food by the mouth being stopped in consequence. For four days after operation the temperature varied between 99° and 101° F. and the pulse between 90 and 108 per minute. During the evening of the fourth day the temperature rose to 102° and the pulse to 120. A second subphrenic abscess was found posteriorly and opened transpleurally. Diarrhœa now set in which was treated with opium. On the fifth day the right parotid became painful and a swelling began to form just over the angle of the jaw which was firm and tender. Cultivations were at once taken from the oral cavity and the fluid squeezed from the duct. On the following day the swelling was more marked and the temperature was 102·6°. On the next day, the third of its onset, the swelling was less marked and softer, efforts to cleanse the mouth having been apparently partially effectual in preventing further infection. Two days later death occurred from septic absorption, other abscesses being found in the pelvis and around the cæcum but no signs of pyæmia or thrombosis being detected anywhere. During the two days before death—the fourth and fifth of its existence—the parotid swelling subsided considerably and became much softer, almost vanishing just before death occurred. On section, to the naked eye the portion of the parotid affected lay around and behind the bifurcation of the duct of Stenson. Minute cheesy masses could be squeezed out of the centre of each lobule, the parts generally looking inflamed to the naked eye. Microscopic sections of Stenson's duct showed it to be choked with granular débris containing micrococci. The lobules affected were breaking down centrally so to form an indefinite mass of necrosed cells and leucocytes, the periphery of

FIG. 3 (CASE 2).

Section from a case of secondary parotitis which discharged pus *viâ* Stenson's duct and almost subsided before the patient died a few days later. Note the draining abscess cavities and the resolving inflammatory changes.

each lobule being either slightly inflamed or healthy, and the vessels practically normal. Many lobules were similarly affected and in different parts of the gland the different stages could be traced as follows: (1) blocking of duct and slight inflammation of the central portion of the lobule around it; and (2) more severe central inflammation of the lobule, with signs of recovery in the peripheral parts. The gland bore evidence of the fact that central suppuration may occur and then subside, the pus either being absorbed or being excreted *viâ* the duct. The cultivations from the mouth and duct during life and those from the cut gland after death grew abundant staphylococci, mixed aureus and albus.

CASE 3.—The patient was a man aged 63 years, who had long been in the habit of using a catheter on account of an enlarged prostate. He had previously suffered from septic cystitis and was admitted for such an attack with uræmic

FIG. 4 (CASE 3).

A later stage, showing necrosis of the central portions of the lobules which are breaking down to form multilocular abscesses. It will be noted that even at this stage the blood-vessels are not thrombosed or specially inflamed.

symptoms. In spite of all care he remained drowsy, lying with his mouth open, and his tongue became very foul. The temperature was about 100° F., the urine was foul, and the kidneys were large and tender. Before admission he had had none but liquid food for a fortnight and he remained on milk diet in the hospital. On Nov. 16th, ten days after admission, he complained of pain over the right parotid region and a swelling formed posteriorly which soon involved the whole parotid and led to a brawny condition of the cheek and œdema of the lips and eyelids. On the 17th the temperature reached 101°. On the 19th the whole side of the face was swollen in a typical manner, the jaw was fixed, and the swelling was very tense. On the 20th the skin was red and hot. The temperature was 102° but there was no fluctuation. An incision was made and some pus was evacuated. From Nov. 20th to 27th the parotid slowly became smaller and the discharge more serous. On Dec. 3rd a fresh abscess burst into the original wound and more pus began to flow. The gland was nearly normal in size and the mouth was easily opened. On the 6th, after an access of uræmic symptoms, the patient died, the parotid being nearly normal in size and the sinus healing. Post mortem the usual picture of back pressure and septic pyelonephritis was presented, but there were no signs of thrombosis or pyæmia. Cultivations during life from the mouth, the orifice of Stenson's duct, and the pus evacuated from the parotid grew abundant staphylococcus aureus. On section the shrunken remains of a loculated abscess cavity occupied the centre of the gland. Microscopically the lobules around presented all phases of infection and inflammation, from simple blocking of the ducts with granular material and micro organisms to complete necrosis of adjacent lobules, the inflammation being most marked in the central portions of the lobules. (Fig. 4.) Except where necrosis was severe the interstitial tissue was practically unaffected and the vessels were normal.

Cases 4 and 5 both occurred during the course of enteric fever.

CASE 4.—The patient was a girl, 26 years of age, whose left parotid became affected during a relapse six weeks after the onset of the disease. Two days later the right parotid became swollen. The left parotid suppurated and was opened on the sixth day, healing on the twentieth. The

right parotid subsided in the course of eight days. Five days before the onset of parotitis the patient had received an opium enema for hæmorrhage, which was repeated next day. The mouth was very foul. Cultivations from the mouth, duct, and pus each grew staphylococcus aureus.

CASE 5.—The patient was a man, aged 32 years, whose right parotid became swollen on the twentieth day of an attack of enteric fever. Four days later the whole face on that side was brawny and œdematous, and on the next day fluctuation could be detected. An incision reached pus rather superficially seated and after draining for nine days the wound healed. The patient invariably lay with the mouth open, adenoids being present, and the oral cavity was very dry and foul. Cultivations from the mouth, duct orifice, and pus each showed growths of staphylococcus aureus. In neither case could the colon bacillus or typhoid bacillus be found, though special cultivations and tests were made to detect them.

CASE 6.—The sixth case is an example of secondary parotitis occurring during diabetic coma. The patient was taken to hospital in a comatose state; the condition of the mouth was very foul and the affection of the parotid was not observed before admission. The right parotid was swollen and the skin over it was tense and brawny, and a sense of deep fluctuation could be detected. Cultivations were taken from the mouth and duct contents and others from the pus which drained away from the gland after an incision had been made into it. They all showed a growth of staphylococcus albus. Death occurring three days later, the parotid was excised through the mouth, no other examination of the body being permitted. Under the microscope the gland showed very distinctly the various phases of duct infection. In the least affected lobules the ducts were simply distended with débris containing cocci. In those more advanced the central parts of each lobule around the duct were inflamed and invaded with micro-organisms. In others the whole lobule, except its most peripheral layer of cells, had broken down and undergone necrosis.

CONCLUSIONS.

On studying the evidence of duct infection afforded by these six cases and the others previously mentioned there can be no doubt that they all without exception afford proof of having arisen in consequence of an ascending infection of the parotid duct, and as the same evidence has been forthcoming in all the cases of secondary parotitis which have been submitted to a definite pathological examination it is more than probable that all cases of secondary parotitis arise in this way.

This suggestion is still further supported by a study of some of the clinical features of secondary parotitis, as will be shown later. In the meantime, however, the experimental evidence of Claisse and Duplay, which goes to prove that infection of the parotid duct can only occur in the presence of certain abnormal predisposing conditions, will be referred to. These observers showed by means of experiments on animals:

1. That the healthy parotid duct cannot be infected either by smearing its orifice with micro-organisms or by introducing organisms into its lumen *vid* the normal orifice of the duct or an artificial fistula.

2. That an ascending infection of the duct leading to the production of parotitis, showing all the appearances which have been observed in secondary parotitis in the human subject, can easily be produced by either of these methods in the following circumstances: (1) If the micro organisms introduced were excessively numerous or virulent; (2) if the general vitality of the animal had been previously depressed by starvation or other methods; and (3) if the normal secretion of the parotid had been altered in quantity or quality in one or other of the following ways: (*a*) by ligaturing the duct and preventing the flow of saliva after infection had been attempted; and (*b*) by administering drugs such as opium which check and alter the salivary secretion.

It is evident, therefore, that for ascending infection to occur in the case of the parotid duct, as has also been more or less proved in the cases of the kidney and bile passages, one or other of the following abnormal conditions must previously be present: (1) micro-organisms must be present at the orifice of the parotid duct in larger numbers or of more virulent type than usual; (2) the general vitality of the subject must be reduced so as to render him more liable to succumb to microbic infection; (3) the quantity of secretion passing down the duct and protectively draining it must be diminished; and (4) the quality, and more particularly the normal bactericidal properties, of the saliva secreted must be lowered.

Turning now to the question of secondary parotitis in man, and referring to the list of disorders which have been complicated by this affection, it is evident that they all present one common feature—viz., that they are all particularly likely to be accompanied by those conditions which Claisse and Duplay have shown to be necessarily present before duct infection can be produced in animals. Moreover, the comparative frequency with which parotitis occurs in connexion with each individual disorder varies directly with the degree and frequency with which these predisposing conditions are met with in each instance. Thus on referring to the diseases which are most prone to be complicated by parotitis the following facts are evident.

That in typhus fever and enteric fever, the diseases most frequently complicated in this way, all four of Claisse and Duplay's predisposing causes are present in a severe degree. Thus—

(*a*) More micro-organisms than usual are present in the mouth and they are more virulent than normal for several reasons. 1. The normal drainage of the mouth by swallowing is interfered with owing to the diminution in the amount of saliva secreted when solid food is withheld on the one hand, and the increased quantity evaporated in fever cases in which the mouth is held open on the other. Mechanical cleansing of the mouth by chewing is also absent and in the presence of an excess of dead material and a lack of drainage the oral micro-organisms become more numerous and virulent. 2. In enteric fever the special organisms of the disease may also be present in the mouth and so infect the duct.

(*b*) Lowering of the vitality of the patient and increased liability to microbic infection generally are both well marked in these diseases.

(*c*) The quantity of secretion passing down and protectively draining the parotid duct in these cases is diminished, as the result of fever and absence of solid food, and consequently organisms can more easily ascend the duct than usual. The quantity of secretion passing down the duct may also be further diminished in some cases owing to the administration of opium.

(*d*) The quality and bactericidal value of the secretion of the parotid cannot be definitely proved to be diminished in these cases. It is well known, however, that the chemical constitution of the salivary secretion is profoundly altered in fevers and probably therefore its bactericidal power is also affected.

Exactly similar predisposing causes of duct infection are also specially liable to be present in all the other diseases with which secondary parotitis is prone to occur. Thus in scarlet fever special organisms are present in the oral cavity, which is particularly likely to become septic, as is shown by the state of the throat and the glandular complications which so frequently occur. In pneumonia there is a special organism present in the mouth, and the rapid mouth breathing and the fever dry up the cavity and prevent proper drainage. In all forms of peritonitis, fever, mouth breathing, vomiting, constipation and the administration of opium lead to dryness and sepsis of the mouth, and, moreover, all solid food by the mouth is strictly withheld. In pyelonephritis the foul and dry condition of the mouth and liability to microbic infection are proverbial, as is also the case in diabetes. In mercurial stomatitis, iodism, and plumbism the foul condition of the mouth is a special feature and as these drugs are secreted by the saliva they probably alter its qualities and so lead to duct infection. In old age, dementia, and grave asthenia mouth breathing is common and the condition of the mouth is frequently neglected. In all cases of abnormal menstruation the affection of the parotid may be regarded as an exaggeration of those conditions of altered salivary secretion which have been noted in cases of ordinary menstruation. In some such instances salivation is increased, in others diminished.

On turning to the operations liable to be followed by secondary parotitis, the presence of causes predisposing to duct infection can be similarly detected. Thus in abdominal operations generally the dorsal decubitus and tight binder lead to mouth breathing, and the mouth is frequently inflamed or damaged owing to the prolonged administration of an anæsthetic and the use of gags, &c. Food by the mouth is withheld or liquids only are given; vomiting is

not infrequent owing to the long administration of chloroform, and constipation and the employment of opium also help to render the mouth more septic and to diminish the quality and quantity of the saliva secreted.

The greater frequency of parotitis after septic cases is due to two factors: 1. The patients have usually been ill for some time before the operation and the mouth is consequently foul to start with in consequence of fever, constipation, vomiting, mouth breathing, the administration of opium, and lack of food. 2. The presence of fever after operation and the greater amount of general depression, coupled with more strict absence of food, more frequent vomiting, and the more frequent presence of constipation in these cases, lead to a drier and more septic condition of the mouth than occurs in aseptic cases.

The comparative frequency of secondary parotitis after ovariotomy, as compared with other aseptic abdominal operations, can be similarly explained. Thus in early days ovariotomy was practically the only aseptic abdominal operation frequently performed and it was carried out with a routine which specially predisposed to a septic and dry condition of the mouth. Thus, in the first place, the importance of cleansing the mouth and sterilising the anæsthetic apparatus before operations had not been recognised. In the next place great care was taken to adopt a strict dorsal decubitus, with the head low, and to apply a very tight abdominal binder, both of which lead to mouth breathing. Opium was given as a routine treatment and the bowels were kept closed whilst all food by the mouth was withheld. The influence of these measures in provoking the onset of secondary parotitis by causing foulness of the mouth is evident, for since they have been abandoned in more recent cases of ovariotomy instances of parotitis after ovariotomy are extremely rare and, indeed, no more frequent than after other aseptic abdominal operations, in which these measures are no longer adopted and more attention is devoted to preserving oral asepsis.

SUMMARY.

From a study of these facts it seems highly probable that secondary parotitis is invariably due to an infection of Stenson's duct, dependent on a septic condition of the mouth, and that its onset may be prevented by attention to the following details: 1. The patient's mouth should be carefully cleansed and rendered aseptic before operations and at the commencement of long febrile illnesses. If necessary causes of nasal obstruction leading to mouth breathing, such as adenoids, should be removed. 2. The anæsthetic apparatus should be sterile. 3. The mouth should be periodically cleansed afterwards, especially after every attack of vomiting. 4. The bowels should be opened early and food by the mouth, and especially solid food, should be given as soon as possible. 5. Opium should not be given unless absolutely necessary. 6. The head should not be placed too low nor the binder fixed too tightly and the dorsal decubitus should be given up as soon as possible.

TREATMENT.

Should parotitis threaten to appear every effort should be made to cleanse the mouth and to prevent continued reinfection of the duct, as it is probable that resolution of the inflammation is then far more likely to occur. The administration of a sialagogue and an aperient should also be entertained. If the disease progresses it is most important not to wait for fluctuation before incising the region of the swelling, for in the most dangerous cases in which the pus is most likely to burrow and to lead to serious trouble it lies so deeply beneath the tense parotid fascia that fluctuation may not appear until it is too late. If symptoms progress, therefore, for four days and the swelling increases and becomes œdematous an incision should be made, as also in cases in which the temperature becomes high and intermittent, whether fluctuation can be detected or not. A transverse incision should be made over the point of greatest prominence, having due regard to the situation of the branches of the facial nerve and Stenson's duct; the parotid fascia should be freely incised and not opened by Hilton's method as usually recommended. The finger should be introduced into the abscess cavity as in an abscess of the breast in order to break down the interlobular septa and to convert the various loculi of the abscess into one large cavity, which should then be drained. Otherwise undrained loculi will continue to grow and to burrow and a further operation may be called for, or burrowing may occur and lead to a fistula or other troubles.

ADDENDUM.

To render this paper more complete attention may be directed to the following facts:—

1. The submaxillary and sublingual glands may be affected in an exactly similar manner to the parotid during the course of exactly similar maladies. At times they have been affected with the parotid and at times apart from it. Microscopic sections have been made and they show that the changes present are exactly similar to those found in the parotid in similar circumstances, thus indicating a similar mode of origin by duct infection.

2. Sections have been examined under the microscope from cases of parotitis and submaxillary gland suppuration due to the retention of a calculus in the main duct. They have shown exactly similar changes to those seen in suppurative cases of secondary parotitis and since they are obviously due to duct infection they bear out the theory of origin now advocated for secondary parotitis.

3. In two cases of chronic parotitis due to thickening of the parotid secretion and blocking of the duct I have found the thickened secretion squeezed from the duct to contain staphylococci and it is significant that in each instance a septic focus existed in the mouth. Such cases may be regarded, therefore, as examples of *chronic ascending parotitis*.

4. In a case of fibrous hypertrophy of the submaxillary gland, due to the involvement of Wharton's duct in the scar left after removal of the tongue for cancer, I was led to remove the gland in consequence of its stony hardness, fearing it might inclose infected lymphatic nodules. None was present, however, and the gland on section showed dilatation and destruction of the ducts and chronic inflammatory changes, spreading from the centre of each lobule to its periphery and leading to the formation of an excess of fibrous tissue and to atrophy of the proper glandular elements. That the inflammatory changes present were in part due to duct infection was shown by the fact that cultivations from the ducts afforded a growth of staphylococci.

5. Evidence has been brought forward by various observers to show that epidemic parotitis is due to the infection of Stenson's duct with a specific micro-organism. When considered together, therefore, these facts tend to show that a process of "duct infection" is probably responsible for the origin of all the varieties of simple parotitis, including epidemic parotitis, secondary parotitis, and parotitis due to duct obstruction of any kind by calculi, foreign bodies, scars, or thickened secretion. Parotitis due to tubercle may also arise in a similar manner and the only exceptions are those varieties due to syphilis, to pyæmia, and to the direct spread of inflammation from adjacent parts, such as the cheek or jaw.

There is also evidence to show that the process of duct infection responsible for ascending parotitis is due to one or other of the following causes: 1. The presence of specific micro-organisms in the buccal cavity, such as the special organisms of mumps, typhoid fever, and probably typhus fever and pneumonia also. 2. An increase in the number or virulence of the normal buccal organisms and especially of the staphylococci. 3. Anything interfering with the quantity or quality of the saliva protectively draining down the duct. Either an actual obstruction, such as a calculus, or an alteration in the saliva secreted, resulting from general ill-health or the administration of drugs may produce this effect.

The changes which result from "duct infection" of the parotid vary in degree and the following varieties of parotitis may be distinguished: 1. Hyperacute parotitis, a rare variety, in which sudden necrosis of a large part of the gland occurs. 2. Acute suppurative parotitis, in which the broken-down lobules coalesce to form a lobulated abscess which may either (*a*) rapidly extend and point; (*b*) extend slowly and remain for a time latent; and (*c*) drain *viâ* Stenson's duct and so end in recovery. 3. Acute parotitis, in which suppuration fails to occur, as is usual in epidemic parotitis and about half the cases of the secondary variety. 4. Chronic parotitis, usually due to some definite obstruction in the duct and leading to dilatation of the ducts, atrophy of the glandular elements, periacinar sclerosis, and hypertrophy. Both the submaxillary and the sublingual salivary glands may become the seat of duct infection leading to a series of changes identical with those just described for the parotid. In the case of the kidney, biliary ducts, male genital tract, and the breast similar circumstances are

known to lead to duct infection and varying degrees of inflammatory change are met with in consequence.

It is interesting also to compare pancreatitis with parotitis and to see what evidence exists to show that the different varieties of pancreatitis are due to "duct infection."

In the first place it is known that the pancreas may become affected during "mumps," like the parotid.

Secondly, Mayo Robson's latest classification of pancreatitis in which hæmorrhage is regarded as an epiphenomenon, is practically identical with the classification of parotitis just given. Thus he recognises—Hyperacute pancreatitis, with rapid and extensive gangrene of the glandular tissues. Acute suppurative pancreatitis, which begins in the centres of the lobules like parotitis and forms a multilocular abscess which may similarly pursue one of three courses: (1) rapidly grow and point; (2) grow slowly, remain latent, and form a "cyst"; and (3) ? discharge per the duct. Acute pancreatitis, resulting in resolution, if death does not occur. Chronic pancreatitis, in which there is almost invariably some definite duct obstruction, as in chronic parotitis and in which exactly similar changes are present in the gland, consisting of duct dilatation, parenchymatous atrophy, and interacinar sclerosis.

Thirdly, in all cases of pancreatitis there is evidence of the presence of the same causes that have just been shown to lead to duct infection in cases of secondary parotitis—viz., abnormally numerous or virulent organisms in the vicinity of the duct orifice, or some fault of secretion tending to render infection of the duct more likely to occur. Thus, ulcers in the duodenum and stomach, or catarrhal states due to alcoholism, have been present in many cases, and infected biliary passages in others.

The flow of pancreatic juice has been definitely impeded in some cases owing to the presence of calculi in the pancreatic or common bile-duct or to scars, strictures, adhesions, or an adjacent tumour pressing on the duct. In other instances it is possible that a thickening of the secretion or some alteration in its quantity or quality may have led to infection occurring. Microscopic examinations show that the inflammation in pancreatitis probably begins, and is most marked, around the ducts, in the centres of the lobules, as in cases of parotitis. Further evidence in favour of this view, and therefore in favour of duct infection as a mode of origin, is afforded by the fact that after severe pancreatitis the islands of Langerhans, which lie in the interstitial tissue, remote from the ducts, are still intact and diabetes is absent. In inflammation by direct extension from adjacent parts, on the other hand, if a large part of the pancreas is destroyed *en masse*, the islands disappear also and diabetes ensues.

Since this paper was originally written some experimental results have been published by Bond which throw considerable light on the question of "duct infection" by proving beyond doubt the existence of ascending currents in ducts capable of carrying up pigment particles and therefore micro-organisms from the orifice of the duct to the gland acini *viâ* the lumen of the duct. By experimenting on cases in which fistulæ existed in man, and by other methods in animals, Bond showed that pigment particles deposited at the orifice or in the lumen of a duct were carried up the duct in a direction contrary to that of the ordinary secretory or excretory flow. He showed that such an ascent of pigment particles occurred in all the ducts and mucous canals he examined and by a process of exclusion he proved that the ascent of the particles must be due to a special up-current in the mucus which normally covers the lining of the duct. He also pointed out that micro-organisms might similarly be carried up from the orifice or lumen of the duct to the gland above by means of this current and that in this way the mode of origin of many obscure gland infections might be explained. In the light of these discoveries, therefore, the following conclusions are highly probable. 1. That in the parotid and other glands organisms are normally carried by the ascending mucous current from the duct orifice to the gland above. 2. That in normal circumstances these organisms are harmless, being carried down the duct again by the descending current and possibly rendered innocuous by its bactericidal properties. 3. Should the organisms ascending the duct be more virulent than normal, however, or should the secretion descending the duct be diminished or altered in quality, in consequence of some local or general disorder, inflammation of the duct and gland are likely to ensue. 4. If the ascent of micro-organisms from the duct orifice to the gland is a normal process, as Bond's experiments tend to show, may it not be possible that they have some influence in stimulating the normal secretion of the gland in health and that when they become altered in number or virulence the secretory processes in the gland are consequently changed?

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ON THE DISCRIMINATION OF "PHYSIOLOGICAL ALBUMINURIA" FROM THAT CAUSED BY RENAL DISEASE

AND ON THE MEANS OF CHECKING THE ALBUMINURIA WHERE IT OCCURS INDEPENDENTLY OF SUCH DISEASE.

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WE propose here to consider in connexion with physiological albuminuria (1) the question as to how it can be discriminated from the albuminuria which is dependent upon organic disease; (2) the question as to the conditions which are favourable to its occurrence; and (3) the question as to how it can be checked.

Introductory.—The idea that the presence or absence of albumin in the urine furnishes a trustworthy criterion of the competence or incompetence of the kidney belongs already to the antiquities of medicine. The question as to whether the renal function is impaired can, as the important work of von Koranyi has made clear, be much more justly adjudicated upon by determining whether the kidney is, or is not, competent to elaborate out of the blood a concentrated saline solution. Taking this as our criterion of renal competency we have recently investigated in a series of cases of physiological albuminuria (*a*) the percentage of salts in the urine and (*b*) the excretory quotient.[1]

[1] The signification which we attach to this term will appear below.

Method employed for measuring the salt content of the urine. —One of us working with Kilner showed some time ago[3] that it is possible to substitute for the cryoscopic method introduced by von Koranyi a much simpler method of estimating the salt content of a fluid. The consideration upon which the suggested method was based was the consideration that we can obtain a measurement of the salt content of any fluid by determining the extent to which it must be diluted before it completely dissolves a definite quantum of red blood corpuscles. The carrying out of this involved a five-fold series of operations: (1) the preparation of a suitable suspension of red blood corpuscles; (2) the preparation of progressive dilutions of a standard solution of NaCl; (3) the mixture of an appropriate measured volume of each of these dilutions with the suspension of red blood corpuscles, with a view to the determination of the dilution which exerts a complete hæmolytic effect; (4) the preparation of a series of progressive dilutions of the fluid to be tested; and (5) the mixture of an appropriate measured volume of each of these dilutions with the suspension of red blood corpuscles with a view to determining the dilution which exerts a complete hæmolytic effect. We have recently succeeded in dispensing with the first and most lengthy of these operations and have found means to utilise without further preparation for the purposes of the test unaltered blood obtained from a prick in the finger. All that is required for the purposes of the test is to take a single measured volume of this blood and to mix with it in each case two volumes, instead of—as was prescribed in connexion with the corpuscular suspension originally employed—in each case one volume, of the progressive dilutions. An example will serve to show the method of carrying out the test.

(*A*) By the aid of the technique described in THE LANCET[3] two-fold, two and a half-fold, three-fold, three and a half-fold, and four-fold dilutions of a decinormal NaCl solution were made in capillary tubes. Two volumes of each of these dilutions were then measured off and disposed in order upon a glass slide. A puncture was now made in the finger, and a series of five volumes of blood—separated in each case[4] from each other by an air bubble—was aspirated into a throttled capillary pipette. The five single volumes of blood which were thus obtained were now introduced into, and intimately mixed with, the double volumes of diluting fluid already prepared for their reception. The five volumes of diluted blood thus obtained were now drawn up into the capillary pipette, the different dilutions being in each case separated by a bubble of air. On examining the contents of the tube under oblique illumination it was now clearly seen that no hæmolysis had taken place in the sample of blood which had been mixed with the $\frac{N}{20}$ and $\frac{N}{25}$ solution; that incomplete hæmolysis had taken place in the sample which had been mixed with the $\frac{N}{30}$ solution; and that complete hæmolysis had taken place in the samples which had been mixed with the $\frac{N}{35}$ and all the higher dilutions. It was clear from this result that a solution which produces complete hæmolysis when mixed with the particular blood here employed in the proportion of two volumes of the diluting solution to one volume of the blood possesses a salt content equivalent to $\frac{N}{35}$.

(*B*) A urine derived from a healthy man, who had recently emptied his bladder and who had not ingested any fluid for some hours before, was now taken in hand. Two-fold, four-fold, eight-fold, and 16-fold dilutions were made of this urine with distilled water and in each case two volumes of these dilutions were mixed with one volume of blood

TABLE I.—GIVING SUMMARY OF THE RESULTS OF EXAMINATION OF THE BLOOD AND THE URINE IN EIGHT TYPICAL CASES OF PHYSIOLOGICAL ALBUMINURIA.

No. of case.	Initials, age, and date.	Clinical data.	General character of the urine.	Excretory efficiency of kidneys as determined by the method of hæmolysis.		
				Hæmosozic value of the serum.	Hæmosozic value of the urine.	Excretory quotient.
1	A. B., aged 19 years. March 23rd, 1905.	The patient had had no illness predisposing to nephritis. He had always been well and strong and was so at the time of examination. The albumin was discovered when the patient went up for medical examination. There were no signs of nephritis, either renal or cardiac, other than the presence of albumin in the urine.	Good colour; acid; specific gravity, 1018; albumin ¼ by boiling, absent in early morning specimen, present in afternoon specimen.	= 1·75 per cent. NaCl.	= 3·90 per cent. NaCl.	2·2
2	C. D., aged 21 years, a medical student. March 24th, 1905.	Similar to Case 1. Albumin was discovered accidentally.	Good colour; acid; specific gravity, 1022; albumin, a pronounced trace, absent in early morning specimen, present in afternoon specimens.	March 24th, 1905: = 1·17 per cent. NaCl.	= 2·34 per cent. NaCl.	2·0
				June 7th, 1905: = 0·67 per cent. NaCl.	= 1·74 per cent. NaCl.	2·6
3	E. F., aged 29 years. April 14th, 1905.	Similar to Cases 1 and 2, except in the respect that the patient is an extremely nervous subject. Albumin was discovered accidentally.	Good colour; acid; specific gravity, 1018; albumin, 0·04 per cent. (by Esbach), absent in morning specimen, present in afternoon specimens.	March 14th, 1905: = 1·36 per cent. NaCl.	= 2·73 per cent. NaCl.	2·0
				June 7th, 1904: = 0·96 per cent. NaCl.	= 3·3 per cent. NaCl.	3·4
4	G. H.,* aged 15 years. May 11th, 1905.	Similar to Cases 1, 2, and 3. Albumin was discovered when the patient presented himself for medical examination.	Good colour; acid; specific gravity, 1018; albumin, 0·15 per cent. (by Esbach), absent in morning specimen, present in afternoon specimens.	= 1·56 per cent. NaCl.	= 3·12 per cent. NaCl.	2·0
5	I. J., aged 12 years. April 4th, 1904.	Puffiness developing beneath the eyes led to examination of the urine and detection of albumin. Albuminuria was notably increased by active exercise. The patient was robust and in perfect health.	Albumin, a pronounced trace present in specimen collected some hours after rising.	= 1·0	= 2·0	2·0
6	K. L., aged 45 years. March 22nd, 1904.	The patient, a robust artisan, came to hospital suffering from giant urticaria and recent hydrocele.	Albumin present; one-eighth by boiling.	= 0·7	= 1·8	2·5
	M. N., aged 17 years. March 22nd, 1904.	Similar to Case 1. Albumin present, especially after severe exercise (shooting).	Albumin, a pronounced trace, present in specimen collected some hours after rising.	= 0·835	= 1·87	2·2
8	O. P., aged 55 years.	Similar to Case 1. No atheroma or increased arterial tension.	Colour good; specific gravity 1018; no casts; no blood; quantity normal; albumin absent in early morning specimens; generally a trace of albumin in specimen collected a few hours after rising; a pronounced trace practically always after active exercise.	—	= 1·94	—

* We are indebted to Dr Lewis A. Smith of the London Hospital for permission to make observations on this case.

[3] THE LANCET, April 2nd, 1904, p. 921. [3] THE LANCET, July 5th, 1902, p. 11.

[4] Figured in THE LANCET of Jan. 23rd, 1904, Figs. 10–13, p. 217.

obtained from the same source as before. It was now found that no hæmolysis took place in the samples of blood which had been mixed with the two- and four-fold dilutions of the urine, a trace only of hæmolysis in the eight-fold dilution, while the 16-fold dilution showed complete hæmolysis. In view of this result a 12-fold dilution of the urine was made by mixing two volumes of the eight-fold dilution which was ready to hand with one volume of distilled water. On mixing two volumes of this 12-fold dilution with one volume of blood only incomplete hæmolysis was obtained. It followed from these results that the salt content of the 16-fold dilution of urine was exactly equivalent to that of the 35-fold dilution of decinormal NaCl solution employed in (*A*). A simple arithmetical calulation now showed that a $\frac{N}{35}$ solution of NaCl—equivalent as it is to a 5·85 per cent. solution ÷ 35—contains 0·167 per cent. of NaCl; and that a urine whose 16-fold dilution contains the equivalent of this percentage of salt, contains in its undiluted condition the equivalent of 2·67 per cent. of NaCl.

The whole calculation may perhaps most conveniently be thrown into the following form.

$$\frac{U}{16} = \frac{N}{35} = \frac{5{\cdot}85\%}{35} = 0{\cdot}167\%.$$

$$U = 0{\cdot}167\% \times 16 = 2{\cdot}67\%.$$

Method employed for the determination of the excretory quotient.—The "excretory quotient" was in the paper already referred to[5] defined as the expression for the efficacy of the kidney which is obtained by dividing the salt content of a patient's blood into the salt content of his urine. It might, in relation to the limitations associated with the hæmolytic method and to the circumstance that this method takes cognisance not alone of the salt content but also of any other element in a fluid which counteracts hæmolysis, have been more accurately defined as the expression for the efficacy of the kidney which is obtained by dividing the hæmosozic[6] value of a patient's serum into the hæmosozic value of the urine secreted from that blood fluid. The excretory quotient is elicited by collecting from a patient who has just emptied his bladder a sample of blood and as soon afterwards as may be practicable a sample of urine. Progressive dilutions are made of the serum and urine thus obtained and each of these dilutions is mixed by the technique described above with blood in the proportion of two volumes of diluting fluid to one volume of blood. The excretory quotient is then obtained in accordance with the formula—

$$\frac{\text{Minimum dilution of the urine which effects complete hæmolysis.}}{\text{Minimum dilution of the serum which effects complete hæmolysis.}}$$

Discrimination of "physiological albuminuria" from the albuminuria of organic disease by the aid of the methods described above.—It will be seen on referring to Table I., which summarises the results of examinations of the blood and urine which we have carried out on a series of seven typical cases of physiological albuminuria and in one further case which would seem also to fall into that category, that the excretory quotient is in each case high and that the salt content of the urine has approximated to or exceeded 2 per cent. NaCl, while it has in some cases largely surpassed that figure. These results, which are fully equal to any obtained upon healthy persons, contrast in a very marked manner with those obtained in connexion with renal disease and thus furnish what is in our judgment conclusive evidence that the renal function is in cases of "physiological albuminuria" entirely unimpaired.

Conditions which are favourable to the transudation of lymph into the urinary tubules.—When we reconsider the pathology of "physiological albuminuria" in the light of the data incorporated in Table I. we are led almost inevitably to the conclusion that we have to deal in this condition with a transudation of lymph into intact urinary tubules. This inference wins support from the consideration that the conditions which are favourable to the occurrence of serous hæmorrhage in general—to wit, increased hydrostatic pressure in the capillaries of a particular region, and diminished blood coagulability—are favourable also to the appearance of albumin in the urine in the cases we have here in view. We may recall to mind in this connexion that the appearance of albumin in the urine in physiological albuminuria is influenced by active exercise, by nervous disturbances, and by the assumption of the erect posture; and we may note that under all of these conditions the hydrostatic pressure in the renal capillaries would be increased. We may further in this connexion take cognisance of the fact that a condition of diminished blood coagulability was found in many of our cases of physiological albuminuria; and that the output of albumin in cases of physiological albuminuria can, as is shown in the next section of this paper, be restrained by increasing the coagulability of the blood. It must be left for future experiment to determine whether in physiological albuminuria, as in urticaria, the exudation can be increased by the ingestion

[5] THE LANCET, April 2nd, 1904, p. 921.

[6] The term "hæmosozic" here applied to those constituents of a fluid which preserve the red blood corpuscles from solution is borrowed from Armand Ruffer.

TABLE II.—*Showing the Restraining Influence which is Exerted by Calcium Salts on the Output of Albumin in Physiological Albuminuria.*

—	Period at which observation was made.	Blood-coagulation time.	Maximum concentration of oxalate of ammonium required for decalcification of an equal volume of blood.	Quantity of albumin in the urine and method employed for precipitation of albumin.
A. B. ...	Before the administration of calcium salts.	1 min. 40 secs.	1 in 1500.	¼ volume, boiling.
	60 grains of calcium lactate administered.			
	One and a half hours after the administration of calcium salts.	1 min. 20 secs.	1 in 1000.	$\frac{1}{15}$th volume, boiling.
	Two 20 grain doses of calcium lactate administered.			
	24 hours after the first administration of calcium salts.	1 min. 20 secs.	1 in 1200.	None.
C. D. ...	Before the administration of calcium salts.	1 min. 25 secs.	1 in 1350.	Pronounced trace.
	60 grains of calcium lactate administered.			
	One hour after the administration of calcium salts.	1 min.	1 in 1200.	None.
E. F. ...	Before the administration of calcium salts.	—	1 in 1350.	0·04 per cent., Esbach.
	60 grains of calcium lactate administered.			
	One hour and three-quarters after the administration of calcium salts.	—	1 in 1200.	Slight haze, boiling.
	20 grains of calcium lactate administered three times a day.			
	Six days after the first administration of calcium salts.	—	—	Trace.
	20 grains of calcium lactate administered three times a day.			
	19 days after the first administration of calcium salts.	—	1 in 800.	None.
G. H. ...	Before the administration of calcium salts.	1 min. 55 secs.	—	0·15 per cent., Esbach.
	60 grains of calcium lactate administered.			
	Two hours after the administration of calcium salts.	1 min. 20 secs.	—	0·05 per cent. Esbach.
	24 hours after the administration of calcium salts.	—	—	None.
K. L. ...	Before the administration of calcium salts. While the patient was suffering from giant urticaria.	—	1 in 1200.	¼th volume, boiling.
	20 grains of calcium chloride administered three times a day.			
	Four days after the first administration of calcium salts, the urticaria having completely disappeared.	—	1 in 750.	None.
O. P. ...	Before the administration of calcium salts and after walking several miles.	2 mins. 15 secs.	1 in 1000.	Definite trace.
	24 hours' interval; then the ingestion of 60 grains of calcium chloride.			
	After the administration of calcium salts followed by same walk as before.	1 min. 40 secs.	—	None.

of decalcifying and lymphagogic agents—we have in view here in particular those lymphagogic agents which are contained in shell-fish, crustacea, and strawberries. Pending the carrying out of such experiments it is of interest to note that in one of the cases which we have included in Table I. albuminuria was associated with giant urticaria and recent hydrocele, while in another case occasional puffiness under the eyes was a marked feature.

Observations on the possibility of restraining the output of albumin in physiological albuminuria by increasing the coagulability of the blood.—On following up the line of thought which has been indicated in the foregoing it occurred to us that it ought to be possible to check the excretion of albumin in physiological albuminuria by increasing the coagulability of the blood by the aid of calcium salt. The data set forth in Table II. show that this line of treatment which is effective in many cases of chilblains and urticaria, in weeping eczema, and also in many cases of general œdema due to Bright's disease, is effective also in the case of physiological albuminuria.

In connexion with the results given in Table II. and those set down in previous papers[7] with regard to the effect of a milk dietary upon the coagulability of the blood and its content in lime salts it is interesting to one of us to recall the medical history of one of his pupils who had passed into the Indian Medical Service. This officer, who was the son of a medical man, related that both he and a succession of his brothers had on reaching the period of early adolescence—i.e., the period at which lime salts would be taken out of the blood in connexion with the processes of growth—developed albuminuria which had in each case been permanently arrested by rest in bed combined with a dietary of milk.[8]

On the possibility of discriminating the albuminuria which occurs independently of renal disease from the albuminuria which is due to such disease by noting the effect produced upon the output of albumin by the exhibition of calcium salts.—Having found, as has been shown above, a method by which physiological albuminuria can be abolished the next point which suggested itself for investigation was the question as to whether calcium salts were competent also to abolish the excretion of albumin in albuminuria dependent upon renal disease. The data set forth in Table III. furnish the answer to this question. It will be seen that in spite of the fact that the coagulability of the blood was in each case increased the

TABLE III.—SHOWING THAT THE ALBUMINURIA OF RENAL DISEASES IS NOT ABOLISHED BY THE EXHIBITION OF CALCIUM SALTS.

No. of case.	Initials, age, and date.	Clinical data.	General character of the urine.	Dates of examination.	Excretory efficiency as determined by the method of hæmolysis.			Effect of the administration of calcium lactate.
					Hæmosozic value of the blood serum.	Hæmosozic value of the urine.	Excretory quotient.	
1	C. W., aged 15 years. April 18th, 1905.	Patient has been ill for at least nine months and presents typical symptoms and signs of parenchymatous nephritis—œdema, headaches, thickened arteries, increased arterial tension, and hypertrophied heart.	Smoky; acid; specific gravity, 1016; Albumin; granular epithelial blood casts and blood; about 25 ounces per diem.	Nov. 18th, 1904.	= 1·17 per cent. NaCl.	= 1·17 per cent. NaCl.	1·0	Jan. 1st, 1905.—*Before the administration of calcium salts:* coagulation time of blood, 1 minute 50 seconds; minimum concentration of ammonium oxalate required for decalcification, 1 in 1750; albumin, 1·6 per cent. by Esbach.
				Nov. 19th, 1904.	= 1·56 per cent. NaCl.	= 0·78 per cent. NaCl.	0·5	
				Nov. 29th, 1904.	= 0·97 per cent. NaCl.	= 0·585 per cent. NaCl.	0·6	40 grains of calcium lactate administered. *2¼ hours after the administration of calcium salts:* coagulation time of blood, 1 minute; minimum concentration of ammonium oxalate required for decalcification, 1 in 1200; albumin, 0·9 per cent. by Esbach.
2	T. S., aged 17 years. May 3rd, 1905.	Patient is the subject of a typical parenchymatous nephritis following exposure to cold and wet. Signs and symptoms as in Case 1 and in addition ascites.	As in Case 1; specific gravity, 1012; albumin; from 20 to 30 ounces per diem.	Nov. 16th, 1904.	= 0·82 per cent. NaCl.	= 0·819 per cent. NaCl.	1·0	Jan. 1st, 1905.—*Before the administration of calcium salts:* coagulation time of blood, 1 minute 45 seconds; albumin ⅓ths by boiling.
				Nov. 20th, 1904.	= 0·78 per cent. NaCl.	= 0·78 per cent. NaCl.	1·0	
				Nov. 29th, 1904.	= 0·97 per cent. NaCl.	= 0·78 per cent. NaCl.	0·8	60 grains of calcium lactate administered. *Two and a half hours after the administration of calcium salts:* coagulation time of blood, 1 minute 25 seconds; albumin ⅓ths by boiling.
				Dec. 12th, 1904.	= 0·97 per cent. NaCl.	= 0·78 per cent. NaCl.	0·8	
3	W. W., aged 49 years, shipwright. May 5th, 1905.	At least one year's duration. Œdema of the eyelids, the conjunctiva, and the legs; severe headaches, anæmia, loss of appetite, thickened arteries, high arterial tension, and hypertrophied heart.	Colour, pale; specific gravity, 1010; acid; albumin; hyaline casts; quantity, from 80 to 100 ounces per diem.	Dec. 5th, 1905.	= 1·36 per cent. NaCl.	1·36 per cent. NaCl.	1·0	Jan. 1st, 1905.—*Before the administration of calcium salts:* coagulation time of blood, 30 seconds; concentration of ammonium oxalate required for decalcification of blood over 1 in 800; albumin, ¼ by boiling; 0·68 per cent. by Esbach. 60 grains of calcium lactate administered. *Two and a half hours after the administration of calcium salts:* coagulation time of blood, 25 seconds; concentration of ammonium oxalate required for decalcification of blood over 1 in 600; albumin, ¼ by boiling; 0·76 per cent. by Esbach.
4	A. B., aged 21 years.	Albuminuria associated with a coli infection of the urinary passages which has persisted for years.	Turbid with bacteria; no casts; much bladder epithelium; some polynuclear white blood corpuscles. Albumin; quantity normal.	Feb. 6th, 1905.	= 0·6 per cent. NaCl.	= 0·85 per cent. NaCl.	1·4	Feb. 6th, 1905.—*Before the administration of calcium salts:* coagulation time, 1 minute 50 seconds; minimum concentration of oxalate of ammonium required for decalcification of blood, 1 in 1000; albumin, 0·17 per cent. 60 grains of calcium lactate administered. *45 minutes after administration of calcium salts:* coagulation time, 25 seconds; minimum concentration of oxalate of ammonium required for decalcification of blood, 1 in 750; albumin, 0·66 per cent.

[7] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvi., 1903; and THE LANCET, Oct. 14th, 1905, p. 1096.

[8] We learn from a paper by Dr. Clement Dukes (Brit. Med. Jour., Oct. 7th, 1905) published while this was in the press that he has seen physiological albuminuria disappear under a regimen of milk even apart from rest in bed. Such results would be in all points comparable to those in Table II. above obtained by the exhibition of calcium salts.

output of albumin was not diminished. We have here, as reflection will show, a fact which may with advantage be exploited in the differential diagnosis of albuminuria dependent on kidney disease from physiological albuminuria or, as the case may be, in the determination of the question as to whether albuminuria is or is not in part referable to a simple transudation.

Conclusions.—We venture to suggest, in view of the observations which are set forth in this paper, that it will no longer be justifiable to take, in connexion with examination for insurance or for entry into the public services, the serious view of physiological albuminuria which has hitherto been taken by most clinicians. Where it is found that a patient possesses a normal excretory quotient, and that his albuminuria can be abolished by diminishing the hydrostatic pressure on the renal capillaries and by increasing the coagulability of the blood, there is, we submit, every reason to conclude that the kidney is free from organic disease and that life is no more endangered than it would be if the patient were the subject of urticaria.

A CASE OF VOLKMANN'S CONTRACTURE TREATED BY SHORTENING THE RADIUS AND ULNA.

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ON August 27th, 1903, a girl, aged six years, sustained transverse fractures of the middle of the radius and ulna. A medical man saw her on the evening of the same day and found the forearm to be bruised and much swollen, so that it was difficult to be certain of the diagnosis, but a subsequent skiagram confirmed the accuracy of it. The deformity was corrected and the forearm was fixed between anterior and posterior padded wooden splints which were not tightly applied. The swelling, however, greatly increased, and when the child again visited her medical attendant three days later there were a great deal of œdema and venous congestion of the fingers and hand. On removing the splints the skin was found to be sloughing in three places, one over the front of the forearm just below the middle, one over the scaphoid and trapezium, and one on the lower end of the posterior surface of the radius. The wrist and fingers could not be moved voluntarily by the patient nor could the fingers be extended by the medical attendant and any attempt to do this caused great pain. The child had not complained of pain since the "setting" and this had misled the mother who had not thought it necessary to revisit the medical attendant.

I first saw the child at the out-patient department of the East London Hospital for Children on Oct. 5th, 1903. Her left hand then presented the characteristic deformity of ischæmic paralysis. The forearm was fully pronated and fixed in this position, the wrist was flexed, the proximal phalanges of the fingers were hyper-extended, and the other phalanges were clenched in extreme flexion. When the wrist was well flexed, however, I could uncoil the fingers slightly but not without causing considerable pain. The thumb could be extended much more easily but not completely. The fingers and hand were blue and cold but not anæsthetic. On the front of the forearm there was a large sore two inches by one inch containing a deep slough which was slowly separating. This must have reached almost to the ulna. A healing and more superficial ulcer was seen on the posterior surface of the radius at its lower end and another similar one over the root of the thenar eminence on the scaphoid bone. The bones were firmly united in excellent apposition as shown by the Roentgen rays. The forearm was wasted, especially the flexor muscles. There was no paralysis of the small muscles of the hand and the extensors of the fingers could be seen to contract, although they produced hardly any movement of the fingers. Dr. G. H. Graham examined the affected forearm electrically; there was no reaction of degeneration in the contracted muscles. On Nov. 18th the wounds had healed, but the deformity was now extreme, probably increased by the contraction of the granulation tissue in the deep wound on the front of the forearm. Partial anæsthesia had developed in the fingers supplied by the median nerve and a bleb was present just above the nail of the middle finger, the child having burnt her finger without feeling any pain. There were chilblains on some of the other fingers of the left hand and there were none on those of the right hand. On Dec. 16th massage, passive movements, and electrical treatment had been patiently and frequently carried on but the deformity had not diminished; the condition and bulk of the affected muscles had slightly improved. The skin now looked more natural and there was no anæsthesia of any of the fingers. On Jan. 11th, 1904, there was no change in the deformity and the hand was almost useless.

Operation.—The whole left upper limb having been very thoroughly cleaned and compressed on the previous day, an operation was performed on Feb. 1st, 1904, a little more than four months after the accident. Dr. T. L. Llewellyn, late resident medical officer at the East London Hospital, administered ethyl chloride followed by ether. A tourniquet was applied round the lower third of the arm and an incision was made along the middle third of the radial border of the forearm; the wound was placed slightly in front of the interval between the radial extensors of the wrist and the special extensors of the thumb. The posterior border of the radius can be easily felt in this interval before an incision is made, but a wound over the extensor carpi radialis longior gives a better access to the radius. This tendon and the radial nerve protected by it were drawn forwards and the extensor carpi radialis brevior was retracted in the opposite direction. This gave an excellent view of the insertion of the pronator radii teres and the outer surface of the radius as far as the extensor ossis metacarpi pollicis, where the latter crosses the bone obliquely forwards; at the lower end of the wound the upper fibres of the pronator quadratus were also displayed. The radius having been well cleared of soft parts was drilled at two points one and a quarter inches apart, and then a portion of it three-quarters of an inch long was removed by the aid of a small saw. The piece of bone removed extended from the pronator teres insertion to the pronator quadratus; some of the fibres of the former had to be detached from the bone to allow the removal of enough bone. The wound was now covered by a temporary dressing, during the removal of a similar portion of the ulna through a longitudinal incision along its subcutaneous border. Care was taken to divide the ulna an inch higher than the radius so as to prevent cross union by callus. The bone ends were brought together and fixed in apposition by means of fine silver wires, one for each bone. The bones were soft and the wire cut its way out by fissuring the upper ulnar fragment and another hole had to be drilled farther away from the section; this was difficult and it demonstrated the wisdom of drilling the bones before sawing them. The drill holes in the radius had been so directed that when the wire was tightened the lower fragment of the radius rotated into a position of semi-supination. Thus the troublesome fixation of the hand in full pronation was corrected. During the operation it was noticed that the deeper flexors in front of the radius and ulna were firm and fibroid. On removing the tourniquet there was but little bleeding, so the wounds were at once sutured and the limb was enveloped with aseptic dressings and lightly secured in good position on an internal angular splint in order to preserve the semi-prone attitude of the hand. When the operation had been completed the wrist and fingers could be extended almost, but not quite, into a straight line with the forearm. The splint was long enough to maintain this correction. The operation lasted for 40 minutes.

On Feb. 2nd there was no anæsthesia of the skin supplied by the radial nerve. After the fourth day passive movements of the fingers were carried out several times daily and the child was encouraged to move the fingers from the first day. When the bones had united pronation and supination were also practised diligently and massage also was carefully performed after the ninth day. On Feb. 12th the stitches were removed, the wounds having healed perfectly. There was no delay in securing bony union. The splint was discarded after 16 days but shortly afterwards there was some return of the contraction of the fingers and a splint was therefore used during the night. The patient left the hospital on March 1st much improved.

The mother took an intelligent interest in the treatment and carried on the massage and passive movements after the child had returned to her home. She applied a splint every

night to prevent a return of the contraction. She also gave the child a weight to carry with her left hand and induced her to use this hand as much as possible. The weight was gradually increased to ten pounds and was attached to a comfortable handle. This treatment has done a great deal of good in developing the function of the diseased muscles and also in preventing a return of the deformity. The forearm muscles have increased very considerably in bulk, the limb has lost its lean, shrunken appearance, and the left hand is getting more and more useful. The child can use the hand for most things and can pick up a pin or a penny with ease and rapidity. She also has a good range of movement in the fingers and a powerful grip, and supination and pronation are very well performed. There is still, however, a slight deformity owing to the flexors of the ring and middle fingers being a little too short and also adherent to the large scar on the front of the forearm. This does not materially interfere with the function of these fingers, for the child easily gets over the difficulty by slightly flexing the wrist.

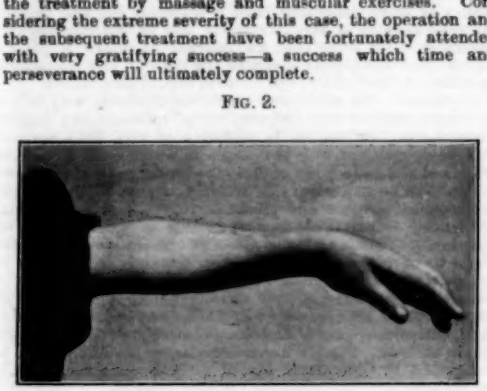
Dr. Llewellyn very kindly took two photographs of the limb for me; one was taken a few days before the operation and the other in August of last year, six months after the operation. (See Figs. 1 and 2). Since then the condition of

FIG. 1.

Condition of the limb before operation.

the hand has improved and the child is still going on with the treatment by massage and muscular exercises. Considering the extreme severity of this case, the operation and the subsequent treatment have been fortunately attended with very gratifying success—a success which time and perseverance will ultimately complete.

FIG. 2.



Condition of the limb six months after operation.

I have not been able to find any published account of the way to perform the operation and therefore I have ventured to give a description of the method which I adopted after a careful observation of the anatomy of the part in the cadaver. I believe that it is the easiest, safest, and best way. This patient attended my out-patient department a month ago and then, a little over 18 months after the operation, she had regained a very useful hand, which is, in fact, employed almost as freely as the other one. In March of this year, however, I had had to lengthen the shortened superficial flexors of the ring and middle fingers and detach them from the large anterior scar which was removed. I then took the opportunity of removing a piece of the flexor sublimis for microscopical examination; it showed much interstitial fibrosis.

Remarks.—This serious deformity, which was first described by Professor Volkmann[1] in 1875, is scarcely mentioned in any of the text-books on surgery and medicine. Yet it is not a very rare complication of fractures of the upper limb, for I have already seen seven cases. It is practically always due to the pressure of splints and is therefore avoidable if only the risks of inducing it were more generally remembered. Mr. H. W Page,[2] Mr. H. Littlewood,[3] and Mr. H. L. Barnard[4] have each written papers on the subject, and Mr. L. S. Dudgeon[5] in 1902 collected the reports of all the published cases and gave an excellent account of the disease. This valuable paper should be consulted by everyone interested in the subject.

Definition.—"A contraction of the fingers, and sometimes of the wrist, which comes on rapidly with loss of power which is not absolute in the forearm muscles after a severe injury, usually in the region of the elbow-joint, generally in young children. The deformity is due to changes in the flexor muscles without injury to the peripheral nerves, caused in many cases by tight bandaging and the pressure of splints" (Dudgeon).

Etiology.—In his paper Mr. Dudgeon has given a full description of 15 cases and since then he has exhibited two others before the Clinical Society. Adding three cases of my own, one has 20 to compare in searching for a common cause of the contracture.

It is a very striking and suggestive fact that in 19 of these cases splints had been employed, the only exception being Professor Schloffer's interesting case.[6] (Here I must explain that in Mr. N. Davies-Colley's case[7] splints had been applied and this is true also of Case 13 in Mr. Dudgeon's list.) Not only were splints used in 19 cases but they exercised sufficient pressure to cause sloughing in at least 14 of these. It is fairly clear therefore that undue pressure by splints is the chief cause of the condition. It is not so much that the splint is applied too tightly at first as that no allowance is made for the swelling that is sure to develop in the next few days. Too much reliance is placed on the absence of pain as an indication of safety, for it is a remarkable fact that little or no pain is complained of by these patients.

Obstruction of the brachial artery is also mentioned as a cause. Schloffer's case was probably due to a thrombosis of the axillary artery following a bullet wound. It is likely that this clotting extended into the brachial and its main branches. Secondary anæmia of the flexor muscles was thus induced; some of the large nerves were also damaged in this case, however, and this makes the cause doubtful, and it is a little difficult to understand why the extensor muscles did not suffer if anæmia was the cause. Prolonged obstruction of the circulation by an Esmarch's bandage is also given as a possible cause but I have not been able to find a record of any undoubted example, for a splint has been employed as well.

In nearly half the cases there was a fracture of the lower end of the humerus or a separation of the lower epiphysis and it is possible that in these cases the brachial artery may have been compressed between the splint and the prominent lower end of the shaft of the humerus. In Mr. Pollock's case there was a large mass of callus at this spot. Tearing and bruising of the flexor muscles may very rarely be the main cause, as in König's case of rupture of these muscles in an infant during its delivery; contraction of the sterno-mastoid is, however, only a rare termination of rupture of this muscle.

Pathology.—The surgeons who have examined the contracted muscles all agree that they are pale, firm, and fibroid, but how the healthy muscles have arrived at this state is uncertain. It is not likely that their fibroid condition is secondary to any lesions of the median and ulnar nerve trunks, which give twigs to supply the muscles involved, because paralysis does not precede contracture, as it always does in nerve disease. Moreover, there is rarely any change in the electrical reactions[8] of these nerves or any reaction of degeneration in the contracted muscles which remain capable of producing voluntary movements if only their tendons be relatively or actually lengthened so as to allow a range of movement. There is no paralysis of the small muscles of

[1] Volkmann: Krankheiten der Bewegungsorgane, 1875, p. 846.
[2] Page: THE LANCET, Jan. 13th, 1900, p. 83.
[3] Littlewood: THE LANCET, Feb. 3rd, 1900, p. 290.
[4] Barnard: THE LANCET, April 20th, 1901, p. 1138.
[5] Dudgeon: THE LANCET, Jan. 11th, 1902, p. 78.
[6] Schloffer: Wiener Klinische Wochenschrift, No. 1, 1901, p. 25.
[7] Davies-Colley: Guy's Hospital Gazette, Oct. 5th, 1898.
[8] Oppenheim: Text-book on Nervous Diseases, 1900.

the hand, which are supplied by these two nerves, and anæsthesia of the fingers is rarely complete and is only an occasional complication. It is not denied that injuries of these nerves may coexist with Volkmann's contracture and sometimes the nerves have been found imbedded in scar tissue, but otherwise healthy in appearance.

The fibrosis is probably the result of a myositis which is usually acute but may be subacute in some cases. No reaction of degeneration occurs in this condition. This myositis may have been induced by several causes, of which malnutrition from a prolonged anæmia is the main factor, and direct injury of the muscles by splint pressure is another important one. Volkmann believed that the compressed muscle fibres died and entered into rigor mortis. It is probable that some of them may do this and it may account for the early onset of the contracture, which sometimes comes on within a few hours of the application of the splint and too early for inflammation to be its cause, but this early onset may be due to mere spasm. All the fibres certainly do not enter into rigor mortis, for this is incompatible with the partial recovery which we now know to be possible. The fibres directly compressed between the splint and the radius or ulna would be the most likely to die, but many must escape into comparative safety at the sides of the bones or into the interosseous space. From their anatomical relationships none of the muscles could have all their fibres directly compressed and hence it may be that none are beyond the hope of recovery.

It is very probable that the connective tissues, lymphatics, vessels, and small nerves between the muscle fibres are also damaged by the anæmia and pressure. When the splint is removed and the blood is allowed to enter the damaged vessels again all the phenomena of inflammation proceed apace and the inflammatory products soon surround the muscle fibres, many of which no doubt undergo the vitreous and granular changes characteristic of myositis and become absorbed and lost for ever. Hence the extreme rarity of a complete and perfect recovery either in the function or size of the damaged muscles. Any attempt to stretch the affected muscles causes great pain in the early days of Volkmann's contracture owing to their inflamed condition probably.

A similar deformity may sometimes arise as a result of cellulitis of the forearm, as in Anderson's[9] case which followed an adder bite. Talipes equinus may be due to suppuration or cellulitis of the calf muscles; it is not at all probable, however, that Volkmann's contracture is ever chiefly due to cellulitis spreading from the sore which is so commonly found, for the disease develops when no sores are present or are only to be seen in the dorsal surface of the forearm. It is noteworthy that in these cases no contraction of the extensors ever develops. In my case described above I believe that the contraction of granulation tissue in and around the large deep ventral wound contributed towards making the deformity so unusually severe.

Diagnosis.—It is not easy to mistake a case of Volkmann's contracture for anything else, for the history and the deformity are both characteristic of the disease. Volkmann pointed out the great diagnostic value of the simultaneous appearance of paralysis and contracture, because this distinguishes this condition from the contractures of the hand that may follow diseases of the nerves or central nervous system, in which paralysis precedes contracture by a long time. The normal electrical reactions of the contracted muscles are also valuable aids in diagnosis.

The "main en griffe" of late ulnar paralysis simulates the deformity under discussion, but the following points serve clearly to distinguish the two conditions. In ulnar paralysis there are loss of use, wasting, and reaction of degeneration in all the small muscles of the hand except those forming the thenar eminence, and the two outer lumbricales, and the lean look of the metacarpals due to wasting of the interossei is very striking. The wrist is not flexed and there may be anæsthesia or paræsthesia of the little and inner half of the ring fingers, and some trophic changes such as glossy skin, eczematous rash, and cyanosis of the same fingers. There is no resemblance between paralysis of the median nerve and this contracture but a late case of musculo-spiral palsy may be mistaken for it. In Volkmann's contracture, however, there is no paralysis or reaction of degeneration of the extensors of the fingers and wrist and the tendons of these muscles stand out prominently when voluntary but fruitless attempts at extension are made. In musculo-spiral paralysis these muscles are paralysed and give the reaction of degeneration and the fingers can be extended by means of the healthy interossei and lumbricales. Moreover, the supinator longus and the triceps may also be affected and anæsthesia may be observed in the area of the distribution of the radial nerve. Temporary lesions of the peripheral nerves may complicate Volkmann's contracture and thus some trouble may arise in the diagnosis. Infantile paralysis of the forearm is distinguished by the late appearance of the contracture and by the presence of reaction of degeneration.

In cases of infantile cerebral monoplegia the deformity is usually very different, there is no clawing of the hand, and the elbow is flexed and the absence of any history of splinting generally settles the diagnosis, but I have now a case under observation in which the deformity very closely simulates that of Volkmann's contracture, but the flexion of the fingers can be corrected by manipulation, the contracted muscles relaxing their spasm after a few minutes. The hand in this case is in a prone position and supination to the full degree cannot be obtained by any means. No splint had been ever employed in this case.

It is difficult to imagine anyone mistaking a case of Volkmann's contracture for functional disease but this mistake has been made; the absence of any relaxation of the fibroid muscles under an anæsthetic would at once prove the contraction to be due to a more permanent cause than hysterical spasm.

It should be remembered that contracture does not invariably occur in ischæmic paralysis, for a continuous and prolonged use of an anterior splint may prevent any contraction of the inflamed muscles.[10]

Prophylaxis.—I believe that a proper appreciation of its true cause should render Volkmann's contracture far more rare than it now is. Tight splinting is the one great cause and is clearly avoidable; there can be no advantage in applying a tight splint, especially soon after a fracture has been sustained, and some allowance should always be made for swelling from hæmorrhage and inflammation. Above all, the child should be seen and the limb carefully examined at least once daily for the next few days, and it should be remembered that no pain has been complained of by most of the subjects of ischæmic paralysis; the nerves are probably anæsthetic from severe compression. The splints should be frequently readjusted. It is noteworthy that an anterior splint is more dangerous than a posterior one and that an anterior angular is very dangerous, and an external angular splint is much safer than an internal angular. A plaster splint that completely encircles the limb or one that exerts pressure on the front of the forearm should be avoided.

Treatment.—In mild cases much improvement may follow a long-continued and frequent use of massage and passive movements. Galvanism is probably of very little service. Mr. Dudgeon describes two cases in which a good recovery followed the patient use of massage for between one and two years. To be successful this treatment must be commenced as soon as possible and practised regularly with skill and patience. In severe contractures which allow but little or no passive movements of the affected muscles this treatment fails to cure the deformity but it certainly is of value to keep the muscles from wasting and should always be employed for three or four months before an operation is concluded to be necessary; and after any operation passive and active movements and massage are essential for complete success. Passive movements under an anæsthetic, as suggested by Volkmann, are of no use whatever, for the anæsthetic does not relax the diseased muscles.

Operations.—Some years ago when the pathology of this contracture was more uncertain than it even now remains, the late Mr. Davies-Colley explored the muscles and nerves on the front of the forearm. Finding the muscles to be fibrous and contracted he "partly tore and partly cut through" the following muscles: the flexors sublimis, profundus, carpi ulnaris, and carpi radialis, and also the pronator teres and palmaris longus. The wrist could then be extended but the fingers could not be completely straightened. The deformity, however, soon recurred and the tendons of the flexors sublimis, profundus, and longus pollicis were divided just above the wrist; this completely corrected the deformity but only at the cost of complete loss of voluntary flexion of the second and terminal phalanges of the fingers. I have seen this patient recently, just six years after the

[9] Anderson: The Deformities of the Fingers and Toes p. 66.

[10] Turney, quoted by Dudgeon.

operation. The proximal phalanges can be strongly flexed by the interossei and the small muscles of the thumb and little finger are very active, so that the patient can make much more use of the hand than one might expect. The wrist is unfortunately flexed to an angle of 30° and the forearm is much wasted, three-quarters of an inch shorter than its fellow, and strongly pronated. No fine or delicate movements can be performed because the distal phalanges cannot be flexed. From a study of this case it is clear that nothing is to be hoped from any operative interference with the contracted muscles themselves as it only leads to a rapid recurrence of the contracture and even increases it by the formation and shrinking of more fibrous tissue. Division of the flexor tendons is not advisable, for although it may correct an unsightly deformity it involves a permanent disability to flex the fingers properly.

Tendon lengthening.—To Mr. Littlewood belongs the credit of first applying the operation of tendon lengthening to these cases but Mr. Page was the first to publish an account of a case treated in this way. Mr. Barnard has also published two cases. The splitting method was adopted, the two ends of each tendon being joined by a temporary suture to avoid confusion in suturing them later. The results of the published cases were good and the successful application of this operation to such an apparently hopeless condition was a great gain to surgery. Yet there are certain difficulties and disadvantages which are inseperable from this mode of treatment. The subjects of ischæmic contracture are nearly always young children who have very fine tendons which are not at all easy to slit and suture and consequently they do not always all unite; in one case the flexor sublimis of the index finger failed to unite and it is even possible that wrong tendons may be joined together.

All the surgeons who have published cases remark on the difficulties of the operation at which about ten small tendons have to be lengthened; the operation therefore takes a long time, in one case over one and a half hours, and this is clearly a disadvantage to young children. It is of considerable importance that this operation does not correct the troublesome and disabling fixation of the hand in pronation and a subsequent operation has been found necessary to remove this important part of the deformity. The median nerve is in some danger of being injured at the operation and of being involved in fibrous tissue later.

Excision of portions of the radius and ulna.—Mr. Raymond Johnson[11] was the originator of this excellent method of treatment which has the following advantages:—1. The operation is easier and takes much less time than tendon lengthening. 2. The radius can be drilled and sutured in such a manner as to correct the crippling limitation of supination of the hand which is practically always present. 3. There is no interference with tendons and therefore no risk of non-union or weakness of any of these tendons. 4. If any contracture of the flexors of the wrist be present (as in Mr. Davies-Colley's case) this is also corrected at the same time by this single operation. 5. No nerves are liable to injury during the operation.

The chief objection to this operation is that the bones may fail to unite. In one case the bones were not joined some months after the operation and the boy was then compelled to wear a leather support but with its help he had a useful hand; the surgeon who performed the operation has kindly informed me that he has lost sight of the case and it is therefore not certain whether union ultimately occurred or not. Non-union should not occur if the bones are carefully wired together. The resection shortens the forearm about three-quarters of an inch, but although such a shortening might be serious in the lower it matters little in the upper limb.

Including my own I know of four unpublished cases which have been treated by resection and in all of them the results have been excellent; but it would be very unwise to decide on the value and ultimate place of the operation before a larger number of cases have been published. At the present time I have a recent case under treatment by massage and movements but I am afraid that a resection will have to be resorted to in this case also. The best time for operation is probably about four or five months after the fracture. By August, 1905, a year after the accident, this patient had recovered almost completely. No operation was found necessary but only massage and movements, which were well performed by the nurse and mother. The case was never a severe one, however.

[11] Raymond Johnson: THE LANCET, March 12th, 1898, p. 722.

Prognosis.—Professor Volkmann regarded these cases as practically hopeless but ten years later Mr. Anderson gave a much more hopeful opinion. He says that "the lesion is seldom of a permanent character and the function may generally be restored by systematic, active, and passive movements, with massage and, if necessary, the galvanic current." The truth probably lies about half-way between these extreme views. Some of the mild cases may recover by a persevering application of the treatment recommended by Mr. Anderson, but the majority obtain a useful limb only after some operation which by allowing a more extensive range of movement for the diseased muscles and correcting the deformity at once will enable the treatment by active and passive movements to be thoroughly carried out. This voluntary movement is essential to the development or even continued existence of such healthy fibres as remain amongst the fibrous tissue which has replaced most of the flexor muscles. Massage, electricity, passive movements, and above all, voluntary movements are most useful after the operation and they increase the success of the operation very considerably. It is, however, too much to hope for a complete recovery of the affected muscles, for it must be remembered that many of the fibres are permanently lost and the movements of those that remain are hampered by surrounding fibrous tissue; but a useful hand may be expected even in the worst cases, if they are treated with care and patience.

St. Thomas's-street, S.E.

POPLITEAL ANEURYSM IN A BOY CURED BY HUNTER'S OPERATION.

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FOR about two years I have been looking after a boy with tuberculous disease of the knee-joint; and as the trouble is seemingly at an end, the mother now brings him to me only at long intervals. Last summer she wrote saying that she was about to bring another son as he also had something wrong with his knee. Accordingly, she came on August 15th, and said that the chief object of her visit was to know if, when this boy went back to school at the end of the holidays which were just beginning, his knee would be strong enough for him to play football. She said that 11 months ago he, with other boys, was playing about a heavy log of wood, which, rolling over on him, broke his left thigh bone a little above the knee. The boy was 12 years old, and, from her account, I thought it likely that the case had been one of traumatic separation of the lower epiphysis. But an x-ray picture which she handed me showed that the femur had been broken a few inches above the epiphyseal line, and that although the result of treatment had been all that could be wished, there still remained enough deformity and thickening to show exactly where the breakage had taken place. She went on to say that though the boy was getting about quite well, he now and then felt a strange "click" in the knee, and that sometimes, without any known reason, the muscles of the thigh contracted with such vigour that he could not keep his leg straight, and that the knee sometimes remained thus rigidly bent for 12 hours. That the matron of his school had not thought seriously of the case, and had scarcely called the medical officer's attention to the boy, but had given him a bottle of a liniment which, I believe, is held in high esteem by people who look after injured horses as well as by athletes who have been knocked about or otherwise hurt. Whilst the boy was undressing, the mother said once more that it was chiefly on the question of his being fit for football after the holidays that she wished me to overhaul him.

Having in my mind a recollection of the disease from which his elder brother had suffered, I expected to find a lingering synovitis in this boy's knee, but there was neither heat nor puffiness about it, nor did it contain any free fluid. I therefore told him to get up on to the couch, when I at once saw that he had a popliteal aneurysm; it filled the hollow at the back of the knee and bulged up amongst the ham-string tendons. Compression on the femoral artery caused the swelling to disappear, and on taking off the compression the blood slowly filled up the sac again and with such force that it seemed ready to burst. In answer to

my question, the boy said that he had noticed that there was a good deal of throbbing behind the knee, but that it had not troubled him. The mother at once understood how grave the condition was, and, at my advice, took him straightway in a cab to a nursing home, where, a few hours later, Mr. Herbert F. Waterhouse kindly saw him with me in consultation. We agreed that the artery must be tied without delay, and that as there was not room to take up the popliteal I should tie the femoral in Hunter's canal. This I did next day, putting on two silk ligatures and dividing the artery between them. Dr. A. H. Vassie took charge of the boy from this time, and we did not meet for about a week, when I removed the stitches, the wound being soundly healed. I next saw the boy on Oct. 4th, and found everything quite right, except for a little puffiness about the foot and ankle. The swelling at the back of the knee had gone and there was no pulsation to be felt.

The chief causes of aneurysm in early life are: (*a*) the softening and yielding of the coats of an artery around a septic clot which has been cast adrift from a valve in the heart; (*b*) stretching of a vessel at an atheromatous patch; and (*c*) damage to the artery by direct injury. But with all these causes together aneurysms are very seldom met with in children. This is the first that I have seen, and the only references to other cases of popliteal aneurysms that I can find are by Professor Syme, and by Dr. Keen, of Philadelphia. Professor Syme's patient was a boy aged nine years. The aneurysm was in the lower part of the popliteal space, and though it had been coming on for two years "it had occasioned little uneasiness." Professor Syme cured it by tying the femoral artery. "I am not acquainted," he says, "with any instance of aneurism being remedied by the modern operation at so early a period of life as in the case just related." (Professor Syme does not tell us anything about the cause of this aneurysm.) He says that a Dr. Peach, who had been attending his lectures, told him "that he had witnessed the amputation of a child's thigh for popliteal aneurism of very large size." Unfortunately one can learn nothing further of Dr. Peach's case.

As a supplement to R. W. Parker's valuable and well-known paper on aneurysm in young people, Keen gives notes of 13 additional cases, but amongst them there is no definite account of a popliteal aneurysm.

As regards the operation, I would have liked to tie the artery in the upper part of the popliteal space, after the method of Desault, for there could be little doubt that it would have been found healthy close above the sac. But, as I have said, there was not room. So I chose the next best method, namely, that of Hunter. Desault's operation has this great advantage, that it involves only one obliteration of the main trunk, whilst Hunter's blocks it in two places, so that a double anastomotic loop has to be arranged for, one bringing the blood into the vessel below the spot where it is tied, and another taking the blood beyond the blockage caused by the clotting in the sac, a fact which is likely to make for the on-coming of mortification. Having tied the vessel in the lower part of Hunter's canal (by no means an easy operation) I cut it across between two ligatures. But, to my surprise, when this was done the tied ends did not part asunder as usually happens, because, I suppose, the tissues were a good deal altered and matted by the inflammation set up by the bruising of the parts caused by the log falling upon the limb. Cutting the elastic arterial tube across sets it at rest, lessens the chance of secondary hæmorrhage coming on (of which we used to hear), and, for certain, prevents the vessel again becoming the main channel for blood flowing into the sac.

This way of dealing with the artery is nothing new. Sir Charles Bell advised it 100 years ago: "We now pass a probe under it," says he, "if we intend to tie it twice and cut it between, as I would recommend should be done." Abernethy also spoke in its favour. In a footnote on an account of a popliteal aneurysm he says: "These symptoms determined me to divide the artery, in any future case, between the two ligatures; by which means it will be left quite lax, and the uneasiness in question will, I think, be prevented."

I shall end this little essay by saying that I think it likely that since the days of the great Syme the femoral artery of a child has never been tied for a popliteal aneurysm. And I do so for two reasons: first, in order to show how rare a disease aneurysm is in childhood, at least in the field tilled by the surgeon, and, secondly, in the hope that if any like case should have been met with in this country or abroad, a few lines to that effect may be sent to THE LANCET with the view of making the search for references more easy for future writers.

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Great Cumberland-place, W.

THE PERNICIOUS VOMITING OF PREGNANCY.[1]

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MY attention was particularly directed to the nature of the pernicious vomiting of pregnancy in May, 1903, when I lost a patient at the third month, four days after the induction of abortion, which was undertaken when the patient had a pulse-rate of 80 and appeared to give every promise of a satisfactory outcome. Immediately after the operation the vomiting ceased and the patient was perfectly comfortable for 19 hours, after which she began to vomit again and soon was almost incessantly expelling small quantities of a brownish coffee-ground-like material, without apparent effort. She rapidly passed into a torpid condition and was absolutely unconscious for the last 12 hours of life. At the necropsy, which I was fortunate enough to obtain, we were surprised to find in the liver and kidneys the lesions characteristic of acute yellow atrophy of the liver.

This case made a deep impression on me as the patient appeared to die from an acute intoxication rather than from inanition, as is usually stated. While firmly convinced of the toxæmic nature of the condition I must confess that for a time I overlooked the relation which it might bear to the hepatic lesion, and at first sought to account for the production of the latter by some of the more usual explanations and, finding none, was inclined to regard it as an accidental complication. I soon had occasion to change my opinion, as in the following 12 months I saw in consultation five other cases of pernicious vomiting, in all of which I felt obliged to terminate pregnancy. Two of these cases died—one at the third month identically as the one just described and the other at the seventh month with the jaundice and diminution in the size of the liver characteristic of acute yellow atrophy—thus giving a mortality of 50 per cent. for the six cases. All of these cases were seen in consultation in practice and necropsy was permitted only in the case above mentioned, and it was possible to make accurate metabolic observations in but two others. The results obtained, however, were so striking as to place the nature of the condition in an entirely new aspect and to force me to conclude that some cases at least of pernicious vomiting of pregnancy are undoubtedly toxæmic in nature and are associated with serious lesions of the liver and characteristic changes in metabolism. Since then I have carefully studied a number of other cases and wish on this occasion to direct your attention to the general conclusions which I have drawn from my experience and will refer you to the extended article in the Transactions for the full evidence upon which they are based.

Excluding all cases in which the vomiting results from lesions outside of the generative tract and having no essential connexion with pregnancy, and which should be regarded merely as accidental complications, I consider that the evidence at present available justifies us in dividing the cases of serious vomiting of pregnancy into the following groups: (1) reflex; (2) neurotic; and (3) toxæmic.

1. *Reflex vomiting of pregnancy.*—This variety of vomiting may be due to the presence of abnormalities of the generative tract or ovum which existed prior to the onset of pregnancy or are coincident with it. Among such conditions may be mentioned: (*a*) displacements of the uterus, particularly retroflexions; (*b*) ovarian tumours; (*c*) certain

[1] Abstract of an address delivered before the American Gynecological Society on May 26th, 1905.

cases of endometritis; and (*d*) abnormalities of the ovum, such as hydatidiform mole, hydramnios, and certain cases of twin pregnancy. The occasional causal relation of the first two factors may be demonstrated by the prompt cessation of the vomiting following the replacement of the uterus or the removal of the ovarian cyst. The efficiency of endometritis as an etiological factor is not so clear, although in rare instances the findings at the necropsy or upon the examination of the fœtal membranes afford presumptive evidence that it may be so considered. The several abnormalities of the ovum mentioned above can readily bring about acute over-distension of the uterus, which in turn may cause reflex vomiting. At the same time, however, such a mode of production should not be considered until accurate examination of the urine has demonstrated the absence of a toxæmia. On the other hand, the abnormal condition of the cervix, so frequently mentioned in the literature, should not be considered as factors in the causation of reflex vomiting, since it is probable that the occasional cures resulting from their treatment are only striking examples of the curative effect of suggestion.

2. *Neurotic vomiting.*—Although Anquetin in 1865 directed attention to the neurotic origin of many cases of vomiting and stated that they could frequently be cured by suggestion, it was not until the address of Kaltenbach before the Berlin Obstetrical Society in 1890 that such a mode of origin has been seriously considered. Since then many writers have contended that most, if not all, cases of vomiting of pregnancy are neurotic in origin and more or less closely allied to hysteria and are amenable to suggestive treatment. I consider that such a view is far too extreme, but I nevertheless believe that it holds good for many cases. For it is only by means of such a hypothesis that one can comprehend the surprising and rapid cures which sometimes so promptly follow the employment of absolutely worthless and unphysiological remedies, as well as the effect of suggestion and the rest cure. At the same time this variety of vomiting should be diagnosed only after excluding organic lesions and demonstrating the absence of toxæmia by a most thorough examination of the urine.

3. *Toxæmic vomiting.*—As far as I can learn, Fischl in 1884 was the first to suggest the toxæmic nature of the condition, which he attributed in his case to the absorption of toxic materials from the impacted large intestine. Shortly afterwards attention was directed to the occasional occurrence of multiple neuritis in women suffering from severe vomiting of pregnancy and it was suggested by the earliest writers upon the subject that possibly both conditions were due to the circulation of some toxic material in the blood. During the past ten years this conception of the vomiting of pregnancy has taken a more and more prominent position and many attempts have been made to place it upon a secure foundation—all sorts of theories having been advanced concerning the origin and nature of the toxic material—among which may be mentioned: (*a*) secretion of the corpus luteum; (*b*) secretion of the ovary; (*c*) absorption from intestines; (*d*) hepato-toxæmia (Pinard and Bouffe de St. Blaise); (*e*) invasion of the maternal organism by fœtal elements (the syncytio-toxin theory of Veit, Behm, and others); and (*f*) its identity with eclampsia on the one hand and acute yellow atrophy on the other (Champetier de Ribes and Bouffe de St. Blaise, Stone, Ewing, and Edgar).

That pernicious vomiting stood in some relation to disturbed function of the liver was suggested by the fact that not a few women in the last stages of the disease presented an icteric hue or had marked jaundice. Matthews Duncan as early as 1879 suggested that some of the fatal cases were really examples of acute yellow atrophy of the liver but his teaching evoked but little interest and was soon forgotten. Just about the time that I observed the case mentioned at the beginning of this article, Stone of New York had a similar experience and published a description of his case in December, 1903. He took the ground that the vomiting of pregnancy, eclampsia, and, indeed, most of the disturbances of pregnancy were manifestations of one and the same toxæmia which he attributed to a primary disturbance in the hepatic function. Similar views were also enunciated by Ewing of the Cornell Medical College and Edgar within the past year. I had the opportunity to examine the sections from the liver of Stone's case and found that they were absolutely identical with those from my own. Accordingly, from my own experience, as well as that of Stone and Ewing, I have no hesitation in saying that in at least a certain proportion of the toxæmic cases of vomiting of pregnancy characteristic lesions may be found at the necropsy and are identical with those observed in acute yellow atrophy and icterus gravis. These consist in the degeneration and necrosis of the central portions of the liver lobule and the fatty degeneration and necrosis of the secretory portions of the kidneys and can only be explained by the assumption that some powerfully toxic substance is circulating in the blood. Moreover, in addition to those already mentioned I have found five other cases in the literature in which acute yellow atrophy was found at the necropsy upon patients dying from vomiting of pregnancy as well as five others in which marked fatty degeneration of the liver was noted. When one considers the marked disparity of the statements as to the post-mortem appearances in pernicious vomiting cases in general, and its association with so rare a lesion as yellow atrophy in ten cases it would seem that it must rest upon something more than a mere accidental coincidence and that some direct connexion must exist between the two processes.

Of course, one may object that the usual clinical history of acute yellow atrophy in pregnant women speaks against such a connexion as it is well known that the majority of cases recorded in the literature occurred in the second half of pregnancy and usually in the last three months. At the same time, this is not an absolute rule as a number of cases were observed at the third and fourth months while Le Masson and Beatty noted the condition at the sixth and eighth weeks respectively. Moreover, it is more than likely that not a few cases accompanying vomiting in the early months were completely overlooked, as a large part of the necropsies were performed in private houses by persons not particularly skilled in pathological technique and while searching for changes in the generative or gastro-intestinal tract gave but scant attention to lesions in other organs. Indeed, in several of the cases in which yellow atrophy was observed the authors considered it merely as an accidental condition and attributed the vomiting to some trifling lesion such as a cervical catarrh. It is also possible that the effect of the toxæmia may vary in the different periods of pregnancy, giving rise to vomiting in the early and the characteristic symptoms of acute yellow atrophy in the later months, though I feel that we are probably justified in holding that we have to deal with the same toxic agent in both conditions.

At present we are absolutely ignorant as to the exact nature of the toxic substance or substances concerned, though in the present state of our knowledge it would seem most natural to suppose that they are metabolic in origin and are directly connected with pregnancy—though whether derived from the mother or fœtus or both is not known. All that we can state definitely at this time is that in some cases of pernicious vomiting we have to deal with a toxæmia, which gives rise to serious lesions in the liver and later in the kidneys, and that the latter are secondary in character, as is indicated by the fact that the urine does not contain albumin until shortly before death.

Associated with these lesions is a striking change in metabolism, which is manifested by a marked increase in the percentage of nitrogen put out as ammonia compared with the total nitrogen of the urine, so that the former instead of being from 3 to 5 per cent. as normal may rise to 16, 32, or even 46 per cent., as in several of our cases. Whether this increased ammonia coefficient is due to the fact that the marked destruction of liver tissue interferes with the normal oxidation of nitrogenous material, so that large amounts escape conversion into urea, and are therefore excreted in a less highly oxidised form, as ammonia or whether it merely represents an attempt to neutralise an excessive production of acid—a so-called acid intoxication—is as yet undecided. Reasoning by analogy, it is probable that the latter is the case, just as in diabetes, phosphorus poisoning, and numerous other conditions. But at the same time it is advisable to avoid hasty conclusions, as it is a question very difficult of determination—as has been found to be the case with the high ammonia coefficient so frequently observed in young children suffering from gastro-enteritis. However this may be, the practical outcome of my experience is that a marked increase in the ammonia coefficient in women suffering from pernicious vomiting indicates the existence of a serious toxæmia, which if allowed to continue will be found to be accompanied by lesions of the liver and other organs inconsistent with life. Accordingly, in such circumstances, abortion should be induced as soon as the condition is detected, as it offers the only hope of checking the toxæmia and saving the life of the patient.

My experience has not been sufficiently extended for me

to lay down definite rules as to how great an elevation in the ammonia coefficient is consistent with the safe continuance of pregnancy. But until further experience demonstrates the contrary it would seem safe to assume that an ammonia coefficient of 10 per cent. represents the danger signal and as soon as it is reached immediate interference is demanded. On the other hand, in the reflex and neurotic forms of vomiting the ammonia output remains normal and accordingly the determination of the ammonia coefficient affords not only a means of diagnosis between the neurotic and toxæmic varieties of vomiting but is a most valuable guide as to treatment. Thus, one may have to deal with two women who are apparently equally seriously ill as far as one can judge from the usual clinical point of view and may find in the one a high and in the other a normal ammonia coefficient. In the former case my experience has taught me to urge, as strongly as possible, the termination of pregnancy and even then to express a guarded prognosis; while in the other I give a favourable prognosis, put the patient to bed, and institute a more or less absolute rest cure, and confidently expect her to cease vomiting in two or three days and to be up and about within a week.

While I agree with Stone and Ewing as to the anatomical lesions found in certain cases of vomiting of pregnancy I must take sharp issue with them when they contend that the toxæmic vomiting, acute yellow atrophy, and eclampsia are manifestations of one and the same toxæmia. My experience is just the opposite, as it has taught me that there are at least two toxæmias of pregnancy, and probably more, one giving rise to the vomiting of pregnancy and acute yellow atrophy and the other to eclampsia. This conviction is founded upon careful study of the pathological anatomy, clinical observation, and metabolism in these two conditions. In both necrotic lesions occur in the liver but differ totally in character in the two diseases and need to be seen only once to be appreciated. In eclampsia the lesions begin in the portal spaces and invade the lobule from the periphery toward the centre, while in vomiting of pregnancy the necrosis begins in the centre of the lobule and spreads peripherally and never involves the portal spaces. A personal letter from Schmorl, who first recognised the significance and importance of the liver lesion in eclampsia, and who has had the most extended experience in studying this condition, absolutely confirms my contention. In most cases of eclampsia and pre-eclamptic toxæmia there are marked signs of involvement of the kidneys and general circulation, as manifested by scanty urine in proportion to the intake of fluid, the early appearance of pronounced albuminuria, and the presence of casts and œdema. In vomiting, on the other hand, the urinary output is diminished only as the intake of fluids is interfered with and albumin and casts are present only in the last days or hours of life, while œdema is absent. Chemical examination of the urine shows an equally marked contrast between the two conditions. In eclampsia the total amount of nitrogen is greatly diminished, while the ammonia coefficient remains practically normal. In vomiting, on the contrary, in spite of the scanty amount of urine, the amount of total nitrogen remains approximately normal, while the ammonia coefficient is wonderfully elevated. Generally speaking, it may be said that a high ammonia output is a favourable prognostic sign in eclampsia and a very ominous one in vomiting.

Baltimore, U.S.A.

A CASE OF IMPACTION OF A GALL-STONE IN THE LARGE INTESTINE.

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THE patient, a man, aged 56 years, was admitted to St. Mary's Hospital on Sept. 19th, 1904, under the care of the late Mr. A. Q. Silcock (who gave me permission to publish these notes), with symptoms of intestinal obstruction. He had never suffered from jaundice or biliary colic out in the previous June he had been laid up at home for a month with a severe illness. No definite diagnosis had then been made but his symptoms seemed to point to his illness having a hepatic or a biliary origin. Since that time he had enjoyed fairly good health until Sept. 15th, four days before admission, when whilst at stool he was seized with pain across the abdomen in the region of the umbilicus. He vomited slightly at the time. This pain continued but he was otherwise fairly comfortable until about 48 hours before admission, when the pain became more severe and was felt especially in the right hypochondriac and right iliac regions. Vomiting re-commenced and had continued with increasing frequency up to the time of admission, when he was vomiting about every hour. The vomiting was not fæcal. The bowels had not acted since the start of the attack on the 15th.

On admission the patient appeared to be very ill; he had occasional attacks of hiccough and was vomiting frequently. The pulse was 90 per minute and the temperature was 100·8° F. He was an unusually fat man and abdominal examination was therefore difficult. The abdomen moved but slightly with respiration and was moderately distended. There was increase of resistance on the right side of the abdomen, both above and below the umbilicus. There was tenderness which was most marked in the same region. Rectal examination was negative.

Operation was performed immediately. The abdomen was opened in the middle line below the umbilicus. The region of the appendix was normal but it was noted that the cæcum was distended. The sigmoid flexure was empty. Further examination revealed the presence of a mass of adhesions in the region of the gall-bladder. A second incision was made through the upper part of the right rectus and it was found that many bands of adhesions were binding down the transverse colon to the neighbourhood of the gall-bladder, which was itself rendered unrecognisable by surrounding chronic inflammatory changes. That part of the transverse colon which lay beyond this point was empty and

Sigmoid flexure opened to show impacted gall-stone. Only the upper end of the stone is exposed, but the bulging of the wall of the bowel shows its complete outline.

collapsed. Separation of the adhesions was successful in relieving the obstruction, as evidenced by the filling up of the colon beyond. Gauze drains were inserted and the wounds were closed. 24 hours later the patient's condition had become much worse. The pulse was 136, vomiting had re-commenced shortly after the operation, and the bowels had not been opened. Hiccough was continuous and the distension was increasing. With local anæsthesia the ascending

colon was exposed, opened, and a Paul's tube was tied in. The patient made no improvement and died the same evening.

At the necropsy the large intestine was found to be distended as far down as the brim of the pelvis, at which point a gall-stone of the size and shape of a hen's egg was found impacted (see illustration). The bowel below this point was empty. Slight manipulation from without sufficed to liberate the stone. There was no surrounding peritonitis and on opening the bowel it was seen that the presence of the stone had caused no lesion of the mucous membrane. The transverse colon and the gall-bladder were found embedded in a mass of adhesions and a communication of the diameter of a florin was found between their cavities. The common bile duct was obliterated. Other calculi were found in the gall-bladder.

It would appear that the fistulous communication between the gall-bladder and the transverse colon dated from the illness some four months before admission; that the escape of the stone, partial or complete, into the transverse colon was the cause of the initial symptoms of obstruction; that the liberation of the stone during the separation of adhesions was responsible for the apparent relief of the obstruction at the operation; and that the subsequent lodging of the stone in the upper part of the sigmoid flexure rendered the obstruction again absolute.

The condition described above is one of infrequent occurrence. Thus of 53 cases of intestinal obstruction due to impacted gall-stones collected by Courvoisier,[1] in only 2·4 per cent. was the obstruction in the large intestine. Leichtenstern[2] mentioned 32 cases and in no instance was the obstruction in the large intestine. Barnard[3] recorded nine cases, in none of which was the large intestine the site of impaction. Mayo Robson[4] says: "Gall-stones producing obstruction of the intestine in nearly every case enter the bowel through a gall-bladder duodenal fistula. They rarely enter through the colon; only two specimens of the latter condition were found in the London museums."

Spanish-place, W.

A CASE OF LEPROSY IN A EUROPEAN.

BY J. H. P. GRAHAM, M.R.C.S. ENG., L.R.C.P. LOND.

A YEAR ago the patient first visited Europe, when he came to England from India, where he was born 24 years ago. His parents are English, his mother has lived in India since early childhood, and they are in comfortable circumstances. Three brothers and two sisters complete the family and are known to be in good health. 16 months ago the patient says he was perfectly free from disease and enjoyed good health. He was leading an active, outdoor life and had lived in several localities in India which bear a good health reputation. He had not been brought in any way into actual contact with those suffering from leprosy, though he had seen some few lepers. The food on which he lived was of the usual kind taken by Europeans resident in India; as a boy about once a week he used to eat some dried salt fish imported from Bombay.

The onset of the present illness was insidious and without prodromata, such as headache, nausea, &c.; this is usual though not without exception. Patches of a dull violet colour were noticed first on the forehead; the patches were discrete and varied in size from that of a sixpenny-piece to that of a penny-piece; there was some diminished feeling in the skin thus affected but not marked anæsthesia. It is said that this erythematous eruption was not complicated by bullæ or pemphigus as sometimes happens. The erythema was gradually replaced by the appearance of flat nodular growths, which have somewhat subsided, on the forehead, a not unusual circumstance, but they are very marked on the nose, particularly on the alæ, on the lips, cheeks, ears, and chin. The resulting facies might be more appropriately called satyriasis than leontiasis, confining oneself to the description of the ancients, which cannot be bettered in the instance under review. The nasal passages become temporarily blocked now and again, so that there is justification for believing that the mucous membrane is involved. The voice is weak and squeaky, attacks of sore-throat are common, and there is a sense of fulness about the naso-pharynx and larynx causing a good deal of hawking at times to clear the throat. The conjunctiva of both eyes is affected; it has the appearance of having had liquid fat or vaseline injected beneath it and there are one or two small punctiform hæmorrhages in each. Vision is not as acute as it was before the commencement of the illness but there is no sign of keratitis which has been noted not infrequently in previous cases. Glandular enlargement is not detected, neither is there at present any sign of ulceration, but probably these usual accompaniments will eventually supervene. The eyebrows are devoid of hair, also the eyelids, upper lip, chin, and cheeks; the loss of hair on these parts began with the onset of the illness and is in accord with the natural sequence of events. Formerly the skin of the body was thin and fair; lately it has become darker, a somewhat dull cream colour, and thickened. Perspiration appears to be not diminished, neither is it increased, but the patient says that he is more sensitive to cold than he used to be. The skin of the external genital organs is unaffected and the hair of the scalp does not appear to be falling, though the patient believes that it is getting thinner. Some pigmented areas of skin exist on both forearms; they are discrete and the cutaneous sensibility is slightly diminished. The extensor aspect and radial side of the forearms are the parts implicated. The skin of the hands is thick and thrown into rugæ, the finger ends are somewhat clubbed, and the nails are thick and brittle, but there does not appear to be any enlargement of the hand bones.

About three months ago after a long bicycle ride the patient experienced a good deal of tingling along the front and inner aspect of both thighs. Very shortly afterwards a dull violet patch appeared on the inner aspect of the left thigh above the adductor tubercle. The patch is three inches in diameter. Now the inner aspects of both thighs are discoloured and becoming covered with pigmented spots. There are also diminished cutaneous sensibility and loss of hair. The feet are unaffected. Ordinary examination reveals no defect in any system but the cutaneous. The appetite is good but the patient is very slowly getting thinner and he complains of increasing weakness.

Leprosy was identified in the earliest times but its distinction from a certain heterogeneous group of cutaneous diseases—e.g., elephantiasis, leucodermia, &c.—was not always clearly recognised. At the present day no such confusion exists, the anatomy, geographical distribution, and clinical course are familiar, but the cause yet remains unknown. Some apology is therefore due for bringing forward a purely clinical review of a case which departs in minor details only from the general picture of the disease. The occurrence of leprosy in persons of pure European parentage is very rare. The parents of this patient are pure-bred English; certainly his mother had lived in India since early childhood and he himself was born and brought up in the country. Contagion and heredity are looked upon with doubt as etiological factors, particularly the former, and in this instance can be discounted. A diet of dried fish is claimed as a cause. The patient certainly did as a boy have one meal per week of dried fish imported from Bombay, but the disease occurs in certain places where fish does not form an article of diet.

Wallasey.

[1] Quoted by Treves in Intestinal Obstruction.
[2] Ibid.
[3] Annals of Surgery, vol. xxxvi., p. 161.
[4] Diseases of Gall-bladder and Bile-ducts.

THE SOCIOLOGICAL SOCIETY.—The winter programme of this society announces that at the ordinary monthly meeting on Oct. 24th Dr. Archdall Reid will read a paper on the Biological Foundations of Society and on Dec. 18th (also an ordinary monthly meeting) M. Waxweiler (director of the Institut de Sociologie, University of Brussels) will take for his subject, "The Institut de Sociologie, its Equipment and Work." A new departure is the holding of research meetings, at which papers of interest to specialists only will be read and discussed. The following announcements of such meetings have already been made—viz., Nov. 23rd, the Study of the Individual, by J. L. Tayler, M.R.C.S. Eng., L.R.C.P. Lond.; and Dec. 19th, Biological Methods in Application to Social Problems, by M. Waxweiler. All the meetings will be held at the School of Economics and Political Science, Clare-market, W.C. Papers will also be read at the affiliated societies in the Universities of Oxford and of Manchester.

RECORDS OF 100 ADMINISTRATIONS EACH OF CHLORIDE OF ETHYL AND OF SOMNOFORM ALONE AND IN MIXTURE WITH NITROUS OXIDE.

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ALTHOUGH fully mindful of the important work done by many interested in those anæsthetic agents which of recent years have re-appeared and are now being so largely used, yet there is, I think, a want of a greater number of recorded administrations conducted in a systematic way under such conditions and circumstances as can only be obtained in a large medical institution. It is obvious that so few cases as 400 can be of but little help in forming an opinion, nevertheless their publication may be of interest to some who will add them to their own and to those collected from other sources. As yet it is quite clear that opinions differ widely in relation to certain details in connexion with any one of these anæsthetics and the reasons are not far to seek. It may take years to collect enough trustworthy information before we are able to decide definitely points at issue, and it behoves all those who have the opportunity to add what knowledge they possess in furtherance of this end. In writing this paper my object is to be as brief as possible, confining myself entirely to the 400 cases and only adding such remarks as bear directly on the records.

Conditions under which the records were made.—All the administrations were conducted in the same room—i.e., the extracting-room of the dental department at the Edinburgh Royal Infirmary. The records were commenced in July, 1903, and continued at intervals until March, 1905. The dental surgeons attend every Wednesday mid-day and the work is generally finished in the space of about two hours. With a few exceptions all the cases were taken without selection. Most were of the usual type of patient visiting any of our great hospitals: some were in-patients of the infirmary, some were sent from other hospitals, the consumptive and lock, for instance; others were medical practitioners, students, nurses, and hospital servants, so that it will be seen that this list includes many classes of humanity. The greater number of administrations were given by myself, practically all the chloride of ethyl and somnoform alone, and the nitrous oxide and chloride of ethyl mixture. It should be stated that before undertaking these administrations I had given a number in London by various methods and using a variety of inhalers, and had also seen others conduct administrations both in London and Edinburgh. In a few cases the anæsthetic was given by post-graduates or students under my supervision or by one of the dental surgeons, both the latter being skilled anæsthetists as far as the requirements of dental surgery are concerned. The notes and observations on each case were entered shortly after the patient's recovery. This part of the work was mainly done by one whose practical knowledge and experience in dental surgery as well as anæsthetics are beyond dispute.

The inhaler used.—Generally speaking, the inhaler used and the method of administration were the same as described by me in THE LANCET of Oct. 17th, 1903, p. 1087, and in the *British Medical Journal* of April 23rd, 1904, a brief description of which is as follows. The ether chamber of the ordinary Clover's portable ether inhaler is removed, and the facepiece and the angle-mount (holding the bag of red rubber of one-gallon capacity) are attached. To the angle-mount are fitted an extra large metal tap and tube, the latter projecting into the bag. To this tap is attached a small measure of thick glass, which I had specially made with a flat bottom so that it will stand alone, and graduated to show three, four, and five cubic centimetres. A short piece of red rubber tubing connects this glass to the tap, being securely fixed to the former (*vide* Fig. 1). The following are the points of advantage claimed by this inhaler and method of administration. 1. A measured quantity of the anæsthetic fluid is given, varying according to the age of the patient and taking into consideration the time of anæsthesia required, the nature of the operation, &c. This gives accuracy of dosage and is useful for making observations and notes for future reference. It should also help to insure against an overdose. 2. The anæsthetic can be given *gradually* and that *after* the facepiece is adjusted; this prevents coughing, holding the breath, &c., and produces a satisfactory induction. 3. More can at any time be added if necessary,

FIG. 1.

Author's inhaler.

either by projecting the fluid through the large open tap or by measuring off into the tube; also, either can be done without having to remove the facepiece, which is an advantage in some cases in which air-exclusion is necessary. On the other hand, the tube need not be emptied if satisfactory anæsthesia is likely to be produced by less than its contents. In hospital practice this is kept over for the next case for purposes of economy. 4. In the event of voluntary struggling—as is sometimes the case in children and very nervous subjects—it is easy to empty the tube by tipping it up with one finger, both hands being available to hold the mask and to steady the patient. 5. If the tap is turned off before the tube is fixed on the patient will not experience the slightest smell of the narcotic when the mask is applied. This is of special importance in nervous patients. 6. A perfectly free air-way, no lint, sponge or wool to breathe through, and no freezing vapour near the patient's mouth or nose, as all evaporation takes place in the metal tube and rubber bag. 7. Nitrous oxide can be given as a preliminary. 8. By retaining the ether chamber these drugs can be given with ether or used as a sequence; all that is necessary is the glass tube. (*Vide* Fig. 2.) 9. Economy in the amount of anæsthetic used.

FIG. 2.

The anæsthetic agent is first measured into the glass tube which is then attached to the closed tap. The mask with the tube pointing downwards is applied at the end of an inspiration and must fit the face accurately. A short period of re-breathing is now permitted, the tap is then opened, and at once the angle-mount is rotated until the glass tube is almost horizontal. By gently elevating the glass measure with one finger the fluid flows slowly out through the tap and tube and into the bag. Part of the fluid will evaporate on passing through the tap and tube as it offers a considerable metallic surface. My object in the administration is to present to the patient a dilute vapour at first until signs

of unconsciousness begin to show themselves, then the drug is given more rapidly. Coughing or holding the breath is generally taken as an indication of the vapour being rather too strong for that individual case and in most instances the evaporation of the drug is temporarily checked by turning down the angle-mount or depressing the glass tube until the symptoms vanish. Chloride of ethyl and somnoform were both administered in this way. No capsules were used in any case. Various makes of chloride of ethyl were used but chiefly that of Duncan, Flockhart and Co., also Hedley's and that of Bengué. A uniform system of note-taking was adopted, examples of which are given below.

Chloride of Ethyl Alone.

No.	Patient. Sex.	Patient. Age.	Duration of inhalation in seconds.	Available anæsthesia in seconds.	Ethyl chloride used.	Operation performed; teeth extracted.	Phonation.	Pupil.	Cyanosis.	Stertor.	Remarks.
5	F.	20	45	90	3 c.c.	14	Some.	4 mm.	0	0	—

Nitrous Oxide and Somnoform.

No.	Sex.	Age.	Duration of inhalation. Gas (secs.).	Somnoform and gas (secs.).	Total (secs.).	Available anæsthesia (secs.).	Somnoform used.	Operation performed; teeth extracted.	Phonation.	Pupil.	Cyanosis.	Stertor.	Remarks.
27	F.	18	15	30	45	90	4 c.c.	19	0	Normal.	0	Yes.	Nystagmus.

Chloride of ethyl.—Of the 100 cases 80 were females, 19 were males; the sex in one was not recorded. The oldest patient was 52 years and the youngest was eight years. The duration of inhalation or period of induction was counted from the time the patient began to inhale the vapour until the anæsthesia was considered deep enough for the particular amount of operative work to be performed. The average for the hundred was 46·65 seconds. The longest was 105 seconds. This was due largely to the patient voluntarily holding her breath. The shortest periods were 30 seconds. Two cases required a second dose. In both of these, for the sake of uniformity, I take the induction period of the first inhalation only. Full notes of these two are as follows. Case 69, a female, aged 18 years. Duration of induction first time, 45 seconds; second time, 30 seconds. Available anæsthesia, first time, 50 seconds; second time, 20 seconds. First dose, three cubic centimetres; second dose two cubic centimetres. Two teeth were extracted. There was phonation. The pupils were four millimetres. There was no cyanosis. Stertor was present. The patient was an alcoholic. There were much excitement and struggling and it was necessary to give a second dose, as the operator, a student, had failed to extract the teeth. Case 80 was a female, aged 22 years. Induction period, first dose, 60 seconds; second dose, 30 seconds. Available anæsthesia, first dose, 60 seconds; second, 90 seconds; three cubic centimetres were given each time. Teeth extracted 18. There was no phonation. The pupils were four millimetres. There was no cyanosis or stertor. The anæsthesia was prolonged by a second inhalation as the operation was difficult.

Available anæsthesia.—From the moment the facepiece was removed until some sign of recovery was shown, such as movement, the longest anæsthesia was 205 seconds. Case 66 was a female, aged 31 years. Induction period, 70 seconds. The dose was six cubic centimetres. The teeth extracted numbered 25. The pupils were five millimetres. There was no cyanosis, phonation, or stertor. This case was very good. The two cases in which re-inhalation was necessary are treated in the same way as under "duration of inhalation." The shortest time was 20 seconds, Case 55, a female, aged 13 years. Induction period, 35 seconds. The dose was three cubic centimetres. The teeth extracted numbered two. The pupils were three millimetres. There was no phonation, cyanosis, or stertor. The average anæsthesia was as near as possible 75 seconds.

Amount of ethyl chloride used.—This was generally determined by the amount of operative work necessary in each individual case, taking into consideration the age of the patient, sex, &c. The largest dose given was six cubic centimetres. There were two cases; one is recorded above; the other was a female, aged 23 years. Induction took 85 seconds; anæsthesia lasted 85 seconds. The number of teeth extracted was eight. There was phonation. The pupils were four millimetres. There was no cyanosis or stertor. There were excitement and speaking on going under. The smallest dose was two cubic centimetres. There were two cases. Case 3 was a female, aged 12 years. Induction period, 30 seconds; anæsthesia lasted 35 seconds. The number of teeth extracted was four. The pupils were three millimetres. There was no phonation, cyanosis, or stertor. Good anæsthesia. The other case was that of a child, aged five years. The induction period was 50 seconds; anæsthesia lasted 60 seconds. One tooth was extracted. The pupils were normal. There was no cyanosis, &c. The average dose given in the 100 cases was 3·74 cubic centimetres.

The greatest number of teeth extracted in any one case was 25; next to this 23; and then 20. One in two instances. The average number was 7·24. Phonation occurred in 13 per cent. The pupils were five millimetres in 15 cases, four millimetres in 43 cases, three millimetres in 24 cases, about two millimetres in four cases, and normal in 13 cases. One case was not recorded. There was no cyanosis in 97 cases. The three showing cyanosis are as follows:—

No.	Sex and age.	Duration of inhalation.	Available anæsthesia.	Ethyl chloride used.	No. of teeth extracted.	Pupil.	Phonation.	Cyanosis.	Stertor.	Remarks.
		secs.	secs.	c.c.						
9	F., 20	40	90	3	6	Slightly dilated.	—	Slight.	Very much.	Struggled somewhat.
11	F., 25	45	90	3	4	3 mm.	0	Slight.	Slight.	Very deep anæsthesia.
13	F., 43	45	95	3	13	Normal.	0	Very slight.	Slight.	Good.

Stertor occurred in 19 per cent. of the cases. 15 occurred in females; of these one is recorded above under cyanosis, one is noted as "very much," and the rest were "slight," "very slight," or "yes." In the four males two are recorded as "slight," one as "very slight," and the character of one is not noted.

In a number of cases all through these records there is nothing noted under "remarks" and I think I am quite justified in including these under such headings as satisfactory, good, or very good, because any slight deviation from the normal was at once noted.

Involuntary micturition occurred in 4 per cent. All were females; one was a child, aged nine years, and the rest were adults. 5 per cent., all females, vomited on recovery. As much importance is attached to this event I am giving the notes, leaving out the sex.

No.	Age.	Duration of inhalation.	Available anæsthesia.	Ethyl chloride used.	Teeth extracted.	Phonation.	Pupil.	Cyanosis.	Stertor.	Remar
		secs	secs.	c.c.			mm.			
44	18	45	90	3	5	0	4	0	0	Vomited.
47	18	45	65	3	2	0	4	0	0	Vomited; deaf and dumb.
61	22	45	70	3	2	0	3	0	0	Vomited.
91	26	65	155	5	17	Yes.	5	0	0	3 c.c. first; 2 c.c. at 45 seconds; vomited.
96	40	45	140	4	14	0	5	0	Yes.	Fat plethoric subject; vomited.

It will be seen that one was a case of re-inhalation and one was a fat plethoric subject. With regard to struggling

and excitement on going under there were three cases and on recovery four cases. There was one case of hysterical excitement on recovery. There were four cases of slight movement on recovery but complete analgesia; also one case in which there was movement whilst deeply under. The various pathological conditions noted are as follows: epileptic with enlarged tonsils; specific cirrhosis of the liver; anæmia and faint before inhalation (the colour was improved and the patient said he felt better after operation); lips blue and cold extremities before; alveolar abscess; tuberculous knee; anæmia (four cases in all); cardiac disease; and syphilis. Exception should, I think, be made to the note of one case—viz., that of No. 4, a man, aged 30 years. Induction occurred in 60 seconds. Anæsthesia lasted 60 seconds, with three cubic centimetres; 13 teeth were extracted. "Analgesia was complete but not anæsthesia." I think this remark must be in error, as 60 seconds is given as available anæsthesia; there was stertor, although very slight; and, further, in my experience it is improbable that 13 teeth could be extracted under an analgesic condition without movement or struggling.

Somnoform alone.—This 100 records comprise 76 females and 24 males. The oldest was 52 years and the youngest was six years. The average age was 20·48 years. With regard to the duration of induction, the longest was 120 seconds. This case was a female, aged 15 years; the dose given was three and a half cubic centimetres. Anæsthesia was induced in 65 seconds. 16 teeth were extracted. There were phonation and stertor. The pupils were four millimetres. There was no cyanosis. The patient was very nervous and held her breath during induction. The shortest time of induction was 25 seconds. There were two cases. Case 67 was a male, aged nine years. The dose given was one and a half cubic centimetres. Available anæsthesia, 50 seconds. Three teeth were extracted. The pupils were four millimetres. There was no phonation, &c. Case 98 was a female, aged five years. Anæsthesia was induced in 25 seconds. Duration of anæsthesia, 55 seconds; the dose given was two cubic centimetres. Five teeth were extracted. The pupils were normal. There was no phonation, &c. The average time was 41·3 seconds. With regard to the dose, the largest was five cubic centimetres in one case (No. 93). The patient was a female, aged 30 years. Induction period, 65 seconds and anæsthesia lasted 85 seconds. The teeth extracted numbered 19. There was phonation. The pupils were four millimetres. There was no cyanosis or stertor. The smallest dose was one and a half cubic centimetres (three cases). Case 66 was a female, aged 11 years. Induction period, 30 seconds and anæsthesia lasted 70 seconds. Four teeth were extracted. The pupils were four millimetres. There was no phonation, &c. Case 67 was a male, aged nine years. Induction period, 25 seconds and anæsthesia lasted 50 seconds. Three teeth were extracted. The pupils were four millimetres. There was no phonation, &c. Case 69 was a female, aged 14 years. Induction period, 30 seconds and anæsthesia lasted 60 seconds. Two teeth were extracted. The pupils were normal. There was no phonation, &c. The average dose was 2·77 cubic centimetres for the whole series.

Available anæsthesia.—No re-inhalation was given in this series. The longest time was 180 seconds, Case 62, a female, aged 15 years. Induction period, 35 seconds; the dose administered was three cubic centimetres. The teeth extracted numbered 15. The pupils were five millimetres. There was slight stertor. There was no phonation or cyanosis. The shortest time was ten seconds, Case 51, a male, aged ten years. Induction period, 30 seconds; the dose administered was two and a half cubic centimetres. The teeth extracted numbered three. The pupils were normal. There was no phonation, &c. Average time, 64·83 seconds. The greatest number of teeth extracted from one case was 24, Case 16, a female, aged 27 years. Induction period, 45 seconds; the dose administered was three cubic centimetres. Anæsthesia lasted 105 seconds. The pupils were five millimetres. There was no phonation, stertor, or cyanosis. No remarks were noted. One tooth was extracted in one case, No. 63, a female, aged 33 years. Induction period, 30 seconds. The dose administered was two and a half cubic centimetres. Anæsthesia lasted 80 seconds. The pupils were normal. There was no phonation, &c. The average number of teeth extracted was 6·66. Phonation was recorded in 13 per cent. The pupils were five millimetres in 15 per cent., four millimetres in 41 per cent., three millimetres in 3 per cent., and normal in 41 per cent. No cyanosis was recorded. Stertor occurred in 10 per cent. of the cases. The actual notes are: "Yes" in six; "slight" in three; and "distinct stertor" in one. The remarks are as follows. Excitement on recovery, six; struggling on recovery, two; excitement during induction, one; poor anæsthesia, excitement and swearing, a male, aged 35 years (time not noted), one; total, 10 per cent. There was one case of vomiting afterwards, Case 3, a male, aged 14 years. Induction period, 35 seconds and anæsthesia lasted 50 seconds. The dose administered was two and a half cubic centimetres. The number of teeth extracted was three. The pupils were four millimetres. There was no phonation, cyanosis, or stertor. There was one case of involuntary micturition, Case 15, a male, aged 29 years. Of abnormally long analgesia after there were two cases. I give notes of one, Case 8, a female, aged 15 years. Induction period, 35 seconds and anæsthesia lasted 65 seconds. The dose administered was two and a half cubic centimetres. The number of teeth extracted was seven. The pupils were three millimetres. There was no phonation, stertor, or cyanosis. There were 65 seconds of analgesia after. There were three cases of vertical nystagmus, three very nervous cases, two very obese females, four cases of holding of the breath during inhalation, and one case of muscular spasms. This was Case 81, a male, aged 37 years. Induction period, 60 seconds and anæsthesia lasted 60 seconds. The dose administered was three cubic centimetres. The number of teeth extracted was four. The pupils were normal. There was no phonation, cyanosis, or stertor. He had undergone a recent mastoid operation. One case, a child, had slightly occluded upper air passages and a breath of air was given at 20 seconds. There were one case of very sudden recovery and one suffering from extreme anæmia.

Nitrous oxide and chloride of ethyl.—The inhalers employed in this mixture and the following are as follows: 1. That of my own as described above and used in the following way. To the tap is affixed the rubber tube connected to the nitrous oxide cylinders. The measure glass is now charged and placed near at hand. The gas is slightly turned on with the foot-key. The facepiece is carefully adjusted during an inspiration. When the bag is almost full of gas the tube is disconnected and replaced by the charged measure. After a few breaths the fluid is permitted to evaporate in the way described above only rather more quickly. 2. A Bath's two-way tap gas apparatus, the gas and fluid being introduced by a special opening just above the bag, the principle of which was described by me in 1903.[1] The advantage of this apparatus is that the bag can be filled with gas before the inhaler is placed to the patient's face, but it has been found that the evaporation is not quite so satisfactory if the bag is wet inside. This inhaler was also described in 1904.[2] 3. Dr Hewitt's special gas apparatus and method. This was only used once. It will be seen that the measure glass was used in all administrations. In the majority of cases the amount of gas given was one gallon.

There were 80 females and 20 males. The oldest was 60 years of age and the youngest were two at the age of nine years. The average age was 25·50 years. With the object of determining the best length of time to exhibit nitrous oxide as a preliminary to chloride of ethyl various times were given and I regret to find on going through these records that the number of administrations do not correspond. Previously to these records were a number in which Dr. Hewitt's apparatus and method were tried and I think the reason for not giving a larger number of administrations with more gas than one gallon was that it had been found that better results were attained by using less and a small bag and introducing the chloride of ethyl quite early in the administration.

Class A.—There were seven cases in which nitrous oxide was re-breathed for from 20 to 30 seconds before the chloride of ethyl was introduced and the mixture for about 47 seconds. The dose of chloride of ethyl was three cubic centimetres. The time taken to produce anæsthesia was about 102 seconds and an available period of anæsthesia a little over 60 seconds. 46 teeth were extracted in the seven cases. There was phonation on going under in three cases. The pupils were normal in one case, four millimetres in five cases, and five millimetres in one case. Cyanosis occurred in one

[1] Brit. Med. Jour., Oct. 10th, 1903.
[2] Brit. Dent. Jour., April, 1904.

case and a breath of air was given. In another case a breath of air was given at 40 seconds. No stertor was recorded. In Case 1 between one and two gallons of gas were given. There was no vomiting in any case.

Class B.—There were 41 cases in which nitrous oxide was re-breathed for 15 seconds previously to the introduction of chloride of ethyl. The mixture was given for about 50 seconds. The average time of induction was a little over 66 seconds, the longest being 105 seconds and the shortest 40 seconds. The average available period of anæsthesia was a little over 68 seconds. The longest time was 120 seconds but was not a satisfactory anæsthesia, case 45, a female, aged 22 years; the mixture, 90 seconds, dose three cubic centimetres. 18 teeth were extracted. There was phonation. The pupils were four millimetres and there were stertor and cyanosis. The patient was given a breath of air at 50 seconds. There were much excitement and resistance on recovery but complete analgesia. The shortert time was 35 seconds, Case 73, a male, aged nine years. The mixture 25 seconds. The dose administered was three cubic centimetres. Two teeth were extracted. The pupils were four millimetres. There was no phonation but slight stertor and cyanosis. The average dose was a fraction under three cubic centimetres, practically three cubic centimetres. The largest was five cubic centimetres, giving 70 seconds. The smallest was one and a half cubic centimetres, three cases, producing anæsthesia of 60, 55, and 42 seconds respectively. Phonation occurred in 13 cases, one on going under and the others were not noted as to when. The pupils were five millimetres in 11 cases; four millimetres in 18 cases; three millimetres in six cases; and normal in six cases. Cyanosis was "slight" or "very slight" in 13 cases and "yes" in ten cases. Stertor was noted in nine cases as "yes" and "slight" or "very slight" in four cases. One breath of air was given at 50 seconds in two cases; one breath at 40 seconds in one feeble and neurotic patient; and one breath at 35 seconds in one case (Hewitt's apparatus). One breath of air was given at a time not recorded in one case. There was excitement on going under in one case. There were excitement and resistance on recovery but analgesia in three cases. No case of vomiting and no case of involuntary micturition. There was one case of vertical nystagmus. With regard to pathological conditions, there was one case each of exophthalmic goitre, epithelioma of the cheek, and anæmia.

Class C.—There were 51 cases in which nitrous oxide was re-breathed for ten seconds previously to the introduction of chloride of ethyl and the mixture for about 52 seconds. The oldest patient was 66 years of age and the youngest was nine years of age. The average time of induction was 62 seconds. The longest time was 100 seconds, Case 12, a female, aged 24 years. Gas was given for ten seconds and the mixture for 90 seconds. Anæsthesia lasted 80 seconds. The dose administered was three cubic centimetres. The number of teeth extracted was nine. There was phonation. The pupils were normal. There was slight cyanosis but no stertor. The shortest time was 30 seconds, Case 56, a male, aged nine years. Gas was given for ten seconds and the mixture for 20 seconds. Anæsthesia lasted 40 seconds. The number of teeth extracted was two. The pupils were normal. There was no phonation, &c. The average dose of chloride of ethyl was 3·48 cubic centimetres; the largest was five cubic centimetres. Cases 40 and 88 below are given as examples as there are several (second inhalations not counted). The smallest dose was two cubic centimetres, Case 14. The greatest number of teeth extracted was 15, Case 82, a female, aged 37 years. The total induction was 85 seconds, the anæsthesia was for 100 seconds, and the dose was four cubic centimetres. The pupils were normal. There was no phonation, cyanosis, or stertor. The patient was anæmic; it was a typical, good case. The smallest number of teeth extracted was two, of which there were several instances. Case 14 below is a good example. The average available anæsthesia for this class was 71 seconds. The longest period was 120 seconds (two cases). Case 40, a female, aged 50 years, had the mixture for 65 seconds. The dose administered was five cubic centimetres. The number of teeth extracted was 12. The pupils were five millimetres. There was no phonation, &c. The patient was anæmic. In Case 88, a female, aged 19 years, the mixture was given for 55 seconds. The dose administered was five cubic centimetres. The number of teeth extracted was 15. There was no phonation. The pupils were five millimetres. There was cyanosis. Stertor was slight. Case No. 61 is of interest, as it shows the longest anæsthesia for three cubic centimetres. The patient was a female, aged 23 years. The mixture was given for 35 seconds. Anæsthesia lasted 100 seconds. The number of teeth extracted was six. There was no phonation or cyanosis. The pupils were four millimetres. Stertor was slight. The patient was deaf and had the frontal sinus opened recently. There was reported excitement under the anæsthetic but she was quite quiet under this mixture. The shortest time was 35 seconds, Case 14, a female, aged 23 years. The mixture was given for 75 seconds. The dose administered was two cubic centimetres. The number of teeth extracted was two. There was phonation. The pupils were normal. Cyanosis was slight. There was no stertor. In Case 30 an extra dose of chloride of ethyl was given but the result of the first dose only is added to the sum of average available anæsthesia, &c. The full record is now given. The patient was a male, aged 21 years. Gas was given for ten seconds and the mixture for 55 seconds. The dose administered was three cubic centimetres. Anæsthesia lasted 55 seconds. A further dose of five cubic centimetres for 40 seconds gave a further available anæsthesia of 150 seconds. The number of teeth extracted was 19. There was phonation. The pupils were four millimetres. There were stertor and cyanosis; also marked muscular rigidity all through. Case 31 was omitted in this series because the tongue fell back, thus temporarily obstructing respiration at 40 seconds. There were 11 cases of phonation. The pupils were five millimetres in 15 cases, four millimetres in 26 cases, and normal in ten cases. There was slight cyanosis in 32 cases, and "very slight" in one case. Stertor without further remark was present in six cases, "slight" in 13 cases, and "very slight" in one case. Involuntary micturition occurred in one case and prolonged recovery in two cases of pulmonary tuberculosis. Two cases went under quietly but had violent struggling on recovery. There were great excitement during administration in one case, struggling on recovery in one case, and excitement on recovery in one case. There was no vomiting. The pathological conditions other than mentioned above were a very large abscess in the neck, chronic Bright's disease, and an anæmic woman.

Nitrous oxide and somnoform.—This series is also divided into classes A, B, and C. One gallon of nitrous oxide was given in all cases.

Class A.—Two cases which I am unable to include in *B* or *C*. Case 7, a female, aged 19 years. Nitrous oxide was given for 20 seconds. The mixture was given for 50 seconds. The whole induction period was 70 seconds. Available anæsthesia lasted 120 seconds. The dose administered was three cubic centimetres. The number of teeth extracted was seven. The pupils were five millimetres. There was no phonation, cyanosis, or stertor. The patient vomited afterwards. Case 9 was a female, aged 12 years. Nitrous oxide was given for five seconds. The mixture was given for 30 seconds. The whole induction period was 35 seconds. Available anæsthesia lasted 40 seconds. The dose administered was three cubic centimetres. One tooth was extracted. The pupils were normal. There was no phonation, &c. There was no re-inhalation in this series of 100.

Class B.—There were 72 cases in which nitrous oxide was re-breathed for 15 seconds before the somnoform was given in mixture. The oldest patient was 42 years and the youngest was eight years. The average time during which the mixture was given was 34 seconds. The average duration of induction was 49 seconds. The longest time was 60 seconds and the shortest time was 30 seconds. The average available anæsthesia was 78 seconds. The longest period of anæsthesia was 175 seconds, Case 60, a male, aged 21 years. Induction period 60 seconds. The dose administered was four cubic centimetres. The number of teeth extracted was nine. There was no phonation or stertor. The pupils were four millimetres. There was slight cyanosis. This patient held his breath during inhalation and there was involuntary micturition. The shortest time was 30 seconds, Case 50, aged 17 years. Induction period, 40 seconds. The dose administered was three and a half cubic centimetres. The number of teeth extracted was three. The pupils were normal. There was no phonation, &c. The average amount of somnoform used was a fraction over three cubic centimetres. The largest amount was five cubic centimetres, given on four occasions. One case, No. 30, was a male, aged 16 years. Induction period, 45 seconds. Anæsthesia lasted 90 seconds. The number of teeth extracted was 12. There was no phonation, cyanosis, or stertor. The pupils

were four millimetres. There was no nystagmus. The smallest amount was one and a half cubic centimetres, Case 39, aged 23 years. Induction period, 45 seconds. Anæsthesia lasted 75 seconds. The number of teeth extracted was six. There was phonation. The pupils were three millimetres. There was no cyanosis or stertor. Phonation occurred in 14 cases, the pupils were five millimetres in eight cases, four millimetres in 29 cases, three millimetres in two cases, and normal in 33 cases. Cyanosis was "slight" in four and noted as "yes" in three cases. Stertor was recorded in six cases. The greatest number of teeth extracted was 24. Case 12, a female, aged 19 years. Induction period, 55 seconds. Anæsthesia lasted 80 seconds. The dose administered was five cubic centimetres. The pupils were four millimetres. There was no phonation, &c. One tooth was extracted on five occasions. Involuntary micturition occurred in four cases, vomiting as well in one of those, excitement on going under in one case, hysterical attack before in one case, excitement or struggling after in two cases, great excitement on recovery in one case, struggling (not stated when) in one case (strong athletic man), and nystagmus in three cases. There were a large alveolar abscess and a stiff jaw in two cases. One patient was a very plethoric woman who had lupus and one was a patient with pulmonary tuberculosis.

Class C.—There were 26 cases in which nitrous oxide was re-breathed for ten seconds before the somnoform was given in mixture. The average time during which the mixture was given was about 36 seconds. The oldest patient was 37 years of age and the youngest was 13 years. The average time of induction was a little over 46 seconds. The longest time was 60 seconds and the shortest time was 40 seconds. The available anæsthesia was for 75 seconds. The longest was for 150 seconds. Case 78, a female, aged 34 years; induction period 45 seconds. The dose administered was four cubic centimetres. The number of teeth extracted was ten. The pupils were normal. There was no cyanosis, &c. The shortest time was 15 seconds, Case 75, a female, aged 34 years; period of induction, 50 seconds. The dose administered was three cubic centimetres. The number of teeth extracted was two. The pupils were normal. There were no phonation and no cyanosis. There was slight stertor. Two students extracted. The dose of somnoform was four cubic centimetres in seven cases, five cubic centimetres in one case, and two and a half cubic centimetres in one case. The rest were three cubic centimetres. The greatest number of teeth extracted from one patient was 26 in 90 seconds, Case No. 73, a female, aged 19 years; induction period, 45 seconds. The dose administered was five cubic centimetres. The pupils were three millimetres. There were slight phonation and stertor. There was no cyanosis. One tooth was extracted in one case. There was phonation in ten cases. The pupils were five millimetres in one case, four millimetres in eight cases, three millimetres in four cases, and normal in 13 cases. There were cyanosis in four cases, all slight, and stertor in five cases, all slight. There was loud phonation all through but anæsthesia was complete in two cases. Nystagmus occurred in one case, involuntary micturition in one case, retching in one case, slight retching in two cases, and anæmia with headache in one case.

Space will not permit of my publishing a more complete analysis and I have avoided as far as possible long lists. It should be remembered that many patients had to wait for a long time before their turn came in an adjoining room where the noises of those being operated on could be clearly heard. This will help to explain to some extent the excitement on going under and also on recovery. Further, there is no lavatory accommodation in connexion with this waiting room. The proportion of cases of involuntary micturition might possibly have been less were conditions otherwise. In some cases the operative procedure was continued after the patient manifested signs of recovery. In such cases I generally made inquiries after complete recovery and in almost every case was told that no pain was felt. The analgesia was complete but such a procedure determined excitement and struggling. It was not unusual for such patients to state that they had an unpleasant dream. Moreover, operating on a patient recovering—i.e., when the swallowing reflex is present—will, of course, tend to increase vomiting. All the cases were unprepared but from the hour of the day it is concluded that the majority had not taken food for some time. In the case of somnoform it should be noted that it was not given in cases of advanced cardiac disease or in cases in which trouble might be anticipated. It is not, however, to be understood that they were selected cases. It is remarkable to note the length of time nitrous oxide can be re-breathed in a one-gallon bag in the presence of chloride of ethyl without producing cyanosis or stertor. Case 20 is an instance. The patient was a female, aged 17 years. Gas was given for 15 seconds and the mixture for 90 seconds, total 105 seconds. Anæsthesia lasted 60 seconds. The dose of ethyl chloride administered was three cubic centimetres. Three teeth were extracted. There was no phonation. The pupils were five millimetres. There were no cyanosis and no stertor.

A CASE OF PREGNANCY COMPLICATED BY CHOREA GRAVIDARUM AND ECLAMPSIA; RECOVERY.

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AND

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THE notes of the following case are of interest owing to the fact that the albuminuria and subsequent eclampsia appeared whilst the patient was under observation in St. Bartholomew's Hospital where she had been admitted suffering from chorea.

The patient, aged 19 years, a primigravida, first came under observation on Oct. 11th, 1904. At that time she applied to the obstetrical out-patient department for a maternity letter. She was then noticed to have choreic movements in the left arm and paresis in that arm and the left leg. On the 20th she was admitted to the hospital under the care of Sir Dyce Duckworth. The following history was obtained. She had been married nine months previously and was subsequently deserted by her husband. She now lived with her father and stepmother. Five weeks before admission after a fright caused by a fire occurring in her room, she began to exhibit choreic movements in the left arm and hand. The condition had gradually become more severe, subsequently involving the left side of the face and the left leg. The last catamenial period occurred from Feb. 23rd to 27th—i.e., 33 weeks previously. There was a history of rheumatism on the father's side but the patient previously had exhibited no rheumatic tendency.

On examination the lungs were found to be natural; a slight murmur, probably hæmic, was heard at the pulmonary base, otherwise the heart appeared to be unaffected. There were choreic movements of the left arm and distinct paresis of that limb. The patient was unable to pick up a pin or to feed herself with that arm. The left side of the face and the left leg were similarly, but more slightly, affected. There were present the ordinary signs of pregnancy at the end of the eighth month. The position of the child was ascertained to be left occipito-anterior; the fœtal heart was counted at 152. The knee-jerks and ankle-jerks were brisk; a flexor plantar response was obtained. There was no œdema of the legs. The urine was acid, of specific gravity 1020, and contained no sugar. There was a slight trace of albumin which cleared up in the course of a few days and was then entirely absent for over a month. The temperature was 98·8° F., the pulse was 90, and the respirations were 22. The patient was confined to bed and was given 15 grains of sodium bromide twice daily.

On Oct. 24th the patient's condition was improved and she was able to wash herself with her left arm. On the 31st there was still further improvement and she could use her left arm fairly well. She was allowed to get up. The bromide was discontinued. On Nov. 21st choreic movements were absent and there was good power in the left arm. The urine was quite free from albumin. On the 28th a thick cloud of albumin was found in the urine. On Dec. 2nd albumin was increasing in the urine (0·3 per cent.) The patient complained of headache and abdominal pain at the level of the fundus uteri. There was no vomiting. (This symptom was absent throughout.) At 8.30 P.M. she had an eclamptic fit with general convulsions lasting for ten minutes. The temperature was 99·2°, the pulse was

116, and the respirations were 36. 30 grains of potassium bromide and 15 grains of chloral were given by a nasal tube. At 10 P.M. an attempt was made to induce labour. Chloroform was administered and a "penny air ball" was introduced through the cervical canal, which at the time admitted two fingers. The "air ball" was expanded with ten ounces of warm boric acid lotion. The bag was expelled at midnight. There was no recurrence of convulsions during the night. On the 3rd, at 9 A.M., a second fit occurred which lasted for 20 minutes; convulsions were general. On this occasion the tongue was bitten. Chloroform was given and a Champétier de Ribes bag was introduced through the cervical canal. The fœtal heart was auscultated and distinctly heard after the second convulsion. At 2.15 P.M. the patient was delivered without further assistance of a living female child who weighed 4 pounds (at fortieth week). The temperature was 99·6°, the pulse was 88, and the respirations were 24. On the 4th the patient had passed a good night. There was no recurrence of eclamptic symptoms beyond slight headache. The albumin in the urine had diminished to 0·15 per cent. On the 5th there was a trace only of albumin. There was no headache and the temperature was normal.

Improvement was maintained until Dec. 12th when the patient complained of headache and malaise. The temperature was 102·4°, the pulse was 122, and the respirations were 20. There was a decided increase in the amount of albumin contained in the urine which equalled 0·25 per cent. Involution of the uterus had proceeded perfectly naturally and the lochia had been normal. No explanation was found for the temporary relapse. On the 13th the temperature was again normal and the patient felt much better. On the 16th the urine contained 0·025 per cent. of albumin. On the 25th she left the hospital, the urine still containing a trace of albumin.

It is seldom that such an opportunity of watching the onset of eclampsia occurs as was afforded in this case. An interesting point is the sudden and late appearance of albumin in the urine without any other symptom indicating the onset of eclampsia and the short interval which elapsed between the appearance of albumin and the onset of the first fit (five days). It is further noteworthy that after delivery there were no more eclamptic seizures and that the quantity of albumin in the urine diminished so materially. Unfortunately at the present date the urine is not quite free from albumin; casts, however, are absent.

We are indebted to Sir Dyce Duckworth for permission to publish this case.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON IRIDECTOMY FOR "OCCLUSIO PUPILLÆ SINE SECLUSIONE PUPILLÆ."

BY EDWARD MAGENNIS, M.D. R.U.I.,
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THIS interesting and rare condition, in which membranes grow across the pupils and cause partial or complete blindness, was brought under my observation some time ago in the case of a man whose vision had become so defective that he had to be led into my study by his brother. I performed an iridectomy on both eyes, with the result that he is now enabled to earn his livelihood and his sight was so improved that three months after the operation he could see sufficiently well to write me a letter.

The history of the case is briefly as follows. The patient was a strong healthy man, aged 44 years, a tailor by trade, with a good family history. His vision was excellent up to about 16 years ago, when he had inflammation of both eyes so bad that he was detained in an eye hospital for some weeks. Since that time he had had several similar attacks. After these attacks he noticed his sight beginning to fail and he said that he occasionally saw "clouds floating in front of both eyes like waves of water." His vision gradually and steadily became worse. On examination I found that the pupillary fields were almost entirely covered with an exudate, the result of the numerous attacks of iritis, which in time had become converted into thin membranes of connective tissue, and the layers of retinal pigment on the posterior surfaces of the irides had become, here and there, adherent to the capsules of the lenses. The membranes stretching across the pupils were in like manner attached to the lenses. On ophthalmoscopic illumination, through the chinks in the membrane, I found the fundus reflex good in all directions in both eyes; the anterior chambers were but slightly shallowed. I learned from him that during his stay in hospital drops had been put into his eyes, presumably to dilate the pupils and to break the adhesions, but they invariably brought on attacks of inflammation and he suffered great pain. I performed an iridectomy on the right eye. I did it upwards as I dreaded, from the disturbance of severing the adhesions, that a cataract would speedily form. When I caught the iris in the forceps it was so friable from atrophy that it gave way and only by a sort of wriggling, side-to-side movements of the forceps and by the exercise of extreme caution was I enabled to get it out of the wound and to avoid an irido-dialysis. On removing the dressings next day I found the anterior chamber refilled and the eye looking well. Three weeks afterwards I operated in a similar manner on the left eye and the iris here was even more friable than that of the right. On examining the fundi when the eyes were sufficiently well I found extensive choroiditis in both. This I attribute to an extension of the inflammation from the iris to the choroid.

The condition "occlusio pupillæ," or shutting up of the pupil, was here brought about by a fairly well-organised membrane stretching across the pupil, yet the condition "seclusio pupillæ," or shutting off of the pupil, was not perfected, inasmuch as the adhesions round the pupillary margin were not complete but only occurred at particular spots, thus allowing tolerably free communication between the anterior and posterior chambers.

I had some doubts as to the advisability of operating in this case as it was impossible to judge the true condition of the fundi accurately, and seeing the perfect state of organisation of the membranes, I concluded that the pathological adhesions would be very firm and that their breaking up might cause rapid degeneration of the lenses. However, my patient earnestly solicited that something should be done, and believing that an iridectomy, besides the immediate improvement of vision, would have a beneficial effect upon the nutritive condition of the eye, I decided to operate. Here was a married man with a large family dependent upon him and unless something were done his wife, his children, and himself would have become chargeable to the parish. He is now making a respectable livelihood by soliciting orders for clothes; he wears dark-coloured spectacles and is able to read ordinary print.

Dublin.

A CASE OF TOTAL ALOPECIA FOLLOWING THE USE OF CANTHARIDIN.

BY P. FREDERIC BARTON, M.B., B.C. CANTAB.

ON Dec. 23rd, 1904, I was consulted by a young man for a small bald patch on the back of his head of the size of a shilling. At the edge of the patch there were a few short hairs but microscopically no spores could be detected in them. As the macroscopic appearances were rather those of tinea than alopecia areata the patch was painted on the 26th and 30th with liquor vesicatorius. On Jan. 7th the patient complained of a swelling round the patch and by the 14th the scalp and face were enormously swollen and pitted deeply on pressure. He could not see out of his eyes and the swelling extended down the neck to the upper part of the chest. By the 16th there was a slightly raised rash from head to foot and blood was present in the urine. Early in February the hair began to fall out, first on the head, then over the rest of the body, until it was completely lost, including axillary and pubic hair. Shortly afterwards his nails fell off. At the present time (October, 1905) there is no sign of the hair returning but the nails have reappeared. The patient has been in excellent health all the time. Both before and after this particular case the bottle of liquor vesicatorius had been in constant use with perfectly normal results.

I cannot find any record of a similar case after the use of

cantharidin but doubtless it is due to an idiosyncrasy of the patient. He has been seen by three eminent skin specialists and their prognosis is, on the whole, favourable as the nails have returned and apparently the hair bulbs have not been destroyed. The case, however, appears to be so uncommon that any treatment is of doubtful utility.

Wimbledon, S.W.

A CASE OF PERFORATING WOUND OF THE EYEBALL WITH UNUSUAL TERMINATION.

BY JOHN R. FOSTER, M.B., C.M. EDIN., F.R.C.S. EDIN.,
OPHTHALMIC SURGEON TO THE CAMERON AND THE HARTLEPOOLS HOSPITALS.

IN April, 1904, a youth, aged 18 years, was brought to my consulting room with his right eye bandaged. On examination I found a circular-looking hole about one-eighth of an inch in diameter, directly in the ciliary region and above the horizontal meridian on the nasal side. In the hole clear vitreous was seen, some of which had escaped into the conjunctival sac. The history briefly was that a quarter of an hour previously the patient had been hammering an old dirty piece of brass, a chip of which, in his own words, "had struck the eye and stuck into it." The chip was removed by a fellow workman and the patient was then sent to me.

The treatment consisted merely in gently cleansing the wound and conjunctival sac and inserting a couple of the finest silkworm-gut stitches, after which the eye was kept under atropine with a pad and bandage for six weeks. The irritation was slight and from that time to the present, a period of 13 months, the eye has been normal in vision and in appearance, except for the slight dark mark at the site of the injury.

West Hartlepool.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

A CASE OF CHORION EPITHELIOMA.

(Under the care of Mr. J. BELL.)

THE patient was a Russian, aged 36 years, a multipara, who was admitted to hospital on March 1st. She had had a normal labour three months previously at Port Arthur, the child being alive and well. 14 days after the confinement metrorrhagia and fever began and continued up to the time of her admission to the Government Civil Hospital. On examination the uterus was found to be fixed but was not much enlarged. The patient was very cachectic and had lost flesh. A soft mass protruded from the os which was patulous. The growth bled easily and the vagina had to be plugged for some hours after the examination. A piece was removed and examined by Dr. William Hunter, Government bacteriologist, whose report is attached. During the patient's stay in hospital the temperature was of a continued type, ranging between 100° and 102° F. but occasionally rising above this. The bowels were freely opened and the stench around the patient was very offensive. Operation being considered to be out of the question the patient left the hospital a month after and eventually departed for Europe.

Report by Dr. HUNTER.—Microscopically the piece of tissue submitted to me for examination was not unlike placental tissue. It was soft and spongy and full of blood. Histologically the tissue was found to be made up of areas of free hæmorrhage, blood sinuses, and a peculiar parenchyma. No definite stroma was found. The greater portion of the mass was composed of extravasated blood and as a result of this copious masses of blood pigment were found in certain areas of the tissue, particularly in the areas of free hæmorrhage but also in the parenchyma. The blood sinuses were abundant. They varied in size, possessed delicate endothelial tunics, and were packed full of the formed elements of the blood. The parenchyma possessed a characteristic histogenesis and led me at once to the diagnosis. At first sight certain parts resembled a small round-celled and rapidly growing sarcoma, but this, on more careful examination, proved to be leucocytic accumulations in which were found phagocytes, polyhedral cells, large epithelioid cells, and diffuse plasmodium-like structures. The polyhedral cells arranged themselves into alveoli. The large epithelioid cells—some resembling giant cells—were scattered throughout the parenchyma arranged sometimes singly, sometimes in small groups. They contained nuclei varying in number and endowment with chromatin. The diffuse plasmodial masses were few in number but contained many nuclei. The most typical forms arranged themselves into a network containing the polyhedral cells and leucocytic accumulations already referred to. In certain sections evidence of hyaline metamorphosis was noted. From the histological appearance I am of opinion that the tissue is a rapidly growing chorion epithelioma. The various contained tissue elements, especially the parenchyma, and their arrangement are characteristic. The plasmodial masses are of the type of a well-defined syncytium. These were few in number but this is probably due to the subdivision of the syncytial masses into immense epithelioid cells with large nuclei. Such a metamorphosis is not infrequent in certain forms of chorion epithelioma.

Remarks by Mr. BELL.—The case seems worth recording as this form of malignant disease is not very common and certainly not common immediately following a normal labour. The diagnosis of malignant disease was easy enough for us but it is not easy to say when it became so, as presumably the fever and metrorrhagia were possibly put down to endometritis following the labour, though, on the other hand, the case may have been overlooked owing to the fall of the celebrated fortress and to the incoming medical men having their hands full of war casualties.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Diverticulum of the Bladder.—Primary Tuberculous Infection of the Thyroid.—Necrosis of the Entire Renal Cortex of both Kidneys.—Phagocytosis.

A MEETING of this society was held on Oct. 17th, Dr. P. H. PYE-SMITH, the President, being in the chair.

Dr. H. A. LEDIARD showed a Diverticulum of the Bladder of large size associated with enlargement of the prostate from a miner, aged 62 years, who had suffered from slow stream, retention, foul urine, and much pain, and had to use a catheter. The prostate was removed and discovery was made of a diverticulum behind the bladder, measuring four inches and opening into the bladder by an aperture of the size of the forefinger behind the trigone. The vasa deferentia and vesiculæ seminales had become detached and lay upon the cyst. The ureters were unaffected. The bladder wall was thick and its interior was ragged and ulcerated. The cyst had a thin layer of unstriped muscular fibre and much inflamed fibro-fatty tissue; its capacity might be 15 or 16 ounces. The patient died from pre-existing pyelo-nephritis. The prostate, though not large, had evidently blocked the outlet of the bladder and obliged the patient to make extraordinary efforts to empty it.

Dr. LEDIARD also showed a specimen of Primary Tuberculous Infection of the Thyroid from a strong male, aged 21 years. The left lobe of an enlarged thyroid was found to contain an abscess cavity with thick walls of granulation tissue and fibrous and cellular overgrowth of thyroid stroma. No tubercle bacilli were found and no pyogenic organisms, but the histological appearances were typical of tuberculous disease, numerous giant-celled tubercle follicles being found. There was no other disease of any kind discoverable elsewhere and the patient recovered rapidly. Dr. Lediard remarked on the rarity of thyroid tuberculosis, even in generalised disease, and on the still greater rarity of primary tuberculosis of the thyroid.

Dr. W. S. A. GRIFFITH and Dr. W. P. HERRINGHAM described

a case of Necrosis of the Entire Renal Cortex of both Kidneys, together with thrombosis of all the cortical arteries, occurring in the puerperal state. A woman, aged 35 years, a multipara, was admitted to Queen Charlotte's Hospital and almost immediately was confined of a dead child. She was known to have had chronic nephritis with œdema for at least five years. There were no abnormal symptoms connected with the uterus. The renal functions, on the other hand, showed extreme changes. During the nine remaining days of life only ten ounces of urine were passed in all and none at all during the last six. There was no œdema. Retinopapillitis was observed. Beyond occasional vomiting and slight looseness of the bowels no symptoms occurred that could be called uræmic. There was no headache, delirium (until a few hours before death), or convulsion. The breathing and the pulse were quiet and regular and the mind was calm. The condition resembled obstructive, not inflammatory, suppression. The known history of nephritis, however, and the absence of any symptom of calculus led to the diagnosis of renal degeneration, which the necropsy proved to be of most unusual kind. The cortex was of a bright buff colour, was almost insensitive to stains, and showed in the unstained sections a degeneration of the tubes and of the glomeruli. In the few parts that could be stained there was a general fibrosis of the diffuse type, together with recent cellular infiltration. The cortical arteries, which did not appear to be the subjects of endarteritis, were universally thrombosed. Dr. Griffith and Dr. Herringham referred to a closely similar case recorded by Rose Bradford and Lawrence[1] as the only parallel known to them in literature. Minute chemical analyses were made of the blood. The alkalinity was diminished; the chlorides were normal; the phosphates and urea were enormously, and the potassium was largely, increased; the sodium was diminished. The freezing point was considerably lowered. The amount of urine allowed of no chemical tests; it contained a trace of albumin and a few renal casts. Dr. Griffith and Dr. Herringham pointed out that the condition revealed by the microscope was incompatible with the continuance of either an external or an internal secretion from the kidney and that the case raised in consequence the question whether uræmia could be held to depend upon alterations of either. It was, at any rate, certain that no theory at present advanced upon these lines had been maintained for long.

Mr. L. S. DUDGEON and Dr. E. ATHOLE ROSS communicated a paper on some experimental work which they had recently done on Phagocytosis. They had investigated the blood, bone marrow, peritoneal exudate, and the great omentum subsequently to intraperitoneal injections of the following micro-organisms, toxins, and certain other substances—viz., staphylococcus pyogenes aureus, staphylococcus albus, streptococcus pyogenes, pneumococcus, bacillus pyocyaneus, bacillus typhosus, bacillus coli, bacillus coli killed by heat, bacillus aerogenes capsulatus, bacillus coli after previous injection of morphine, filtered cultures of the bacillus pyocyaneus, a 2 per cent. sterile solution of nucleic acid, sterile normal saline solution, and a sterile suspension of finely divided chalk in normal saline solution. The inoculations were made into rabbits and guinea-pigs which were killed at the end of the following intervals of time: 15 minutes, one hour, two hours, four hours, six hours, and at 24 hours. The blood was examined, in every instance, before and immediately after each injection of the above substances. The total number of leucocytes per cubic millimetre of blood, differential counts of 500 leucocytes, a differential count of 1000 marrow cells, and a similar examination of 500 cells in the peritoneal exudate were made in every instance. In addition the peritoneal fluid was examined in the fresh state and stained film preparations from the great omentum were made. The great omentum was found to play a very important part in every instance. Mr. Dudgeon and Dr. Ross agreed with the researches previously made by Durham that cells might be found on the great omentum in large numbers though extremely scarce in the peritoneal exudate, and the tendency was for bacteria and phagocytes to be deposited in large numbers on the great omentum in all peritoneal infections. For instance, subsequently to intraperitoneal injection of the bacillus aerogenes capsulatus they found 90·2 per cent. of finely granular polynuclear cells in the peritoneal exudate but none contained micro-organisms, while on the great omentum 99·6 per cent. of these cells were found and every one was phagocytic. In such cases the omentum was rolled up and retracted towards the diaphragm and very much injected. Three guinea-pigs received intraperitoneal injections with strict bacteriological precautions of sterile normal saline solution and were killed at the end of 2, 4, and 8 hours respectively. In every instance the peritoneal fluid was sterile but the staphylococcus albus was grown from the omentum. Seven guinea-pigs received intraperitoneal injection of a sterile suspension of chalk in normal saline solution and were killed at the end of 2, 4, 8, and 24 hours respectively. In every instance the peritoneal exudate was sterile but in six out of seven cases the white staphylococcus was cultivated from the great omentum. As regards the blood, the observers found that within a period of 15 minutes from the time of inoculation the total number of finely granular polynuclear cells was increased in every instance while the percentage total was raised in most cases. In the later experiments similar results were obtained. The coarsely granular eosinophiles were sometimes increased in the first three instances but diminished in the last three in every experiment. Peritoneal fluid was present in large amount in all the earliest experiments and diminished in the 24 hours' cases, with the exception of those examples in which the peritonitis was due to the bacillus coli and bacillus pyocyaneus. In most instances the chief cell in the peritoneal fluid in the 15 minutes' experiments was either the small lymphocyte or the coarsely granular eosinophile, while in all other experiments the finely granular polynuclear cell predominated. Macrophages in the earliest and latest experiments were frequently found in fair numbers. One of the most important phagocytes in the 15 minutes, one hour, and two hours' cases was the coarsely granular eosinophile which very often contained many micro-organisms, and in some instances a large number of these cells were found to be phagocytic. In one case 82·2 per cent. of the cells in the peritoneal exudate were of this variety and 208 out of 500 contained micro-organisms. Bacilli which were ingested were found to be swollen and in many instances beaded. The finely granular polynuclear cells were, however, the most important phagocytes from one hour onwards in nearly every case. These leucocytes were found to be ingested by the macrophages in some examples. Agglutination of every variety of cell, with the exception of the small lymphocyte and the coarsely granular eosinophile, was a regular phenomenon. In the guinea-pigs, which had been inoculated intraperitoneally with the bacillus coli subsequently to hypodermic injection of morphine, intraperitoneal phagocytosis was unaffected but the number of leucocytes in the blood was diminished in most of the experiments. Mr. Dudgeon and Dr. Ross always examined the bone marrow in every experiment from a period of 15 minutes up to and including 24 hours after the onset of infection and they have almost invariably found the non-granular lymphoid type of cell to be the most important leucocyte in these cases. They also pointed out that their results could not be in any way compared with those of the vast majority of other observers who have examined marrow in these cases after a lapse of several days. They agreed with Dr. C. Price-Jones as to the scarcity of the finely granular polynuclear cells in the bone marrow. Although they found that the nucleated red cells were increased in many instances after inoculation in both guinea-pigs and rabbits, this was especially so in the case of the pneumococcus and of the streptococcus pyogenes when inoculated into rabbits. They found that the type of marrow in these instances was of the lympho-erythroblastic class. No phagocytosis was ever seen. The "neutrophile reaction" type of marrow described by Muir in septic conditions of many days' standing was not observed by them in their experiments within a period of 24 hours. Mitotic figures were never seen and giant cells did not appear to play any important part in marrow reaction. The coarsely granular eosinophiles were only present in small numbers in the bone marrow in nearly every instance.

[1] Journal of Pathology and Bacteriology, 1898.

CLINICAL SOCIETY OF LONDON.

Cystoscopic Appearances in Renal Disease.—A Case of Tuberculosis in a Diverticulum of the Bladder found in an Inguinal Hernia.

A MEETING of this society was held on Oct. 13th, Mr. H. H. CLUTTON, the President, being in the chair.

Dr. DAVID NEWMAN (Glasgow) made a communication on

the Cystoscopic Appearances in Renal Disease. He demonstrated by means of a specially constructed opaque projector the morbid aspects of the urinary bladder with special reference to the cystoscopic appearances presented by the mucous membrane of the trigone and the orifices of the ureters in certain diseases of the kidney. He first described his original electric cystoscope which was still armed with the first electric lamp introduced (January, 1883) into a human bladder. He then described his modern cystoscope which he claimed fulfilled the following requirements: (1) comparatively small lumen of the stem so that the instrument might be introduced without injury to the urethra or to the neck of the bladder; (2) large field of vision and a clear view; (3) easy means of clearing the field, should it become obscure, without removing the stem of the instrument from the bladder; (4) good illumination without danger of scalding the mucous membrane of the bladder; (5) ease in sterilising the instrument; (6) facility in emptying the bladder, should there be call to urinate, without necessitating the removal of the cystoscope; (7) ability to demonstrate to a second observer the object seen; and (8) means of steadying the instrument while an examination was being made, fixing the prism of the cystoscope at any particular point, and defining clearly the position of the lesion. Among the morbid changes demonstrated were the following: hyperæmia of the bladder in a case of injury to the medulla oblongata; recent tuberculous deposit close to the neck of the bladder; advanced tuberculous ulceration of the mucous membrane due to a mixed infection of tubercle and colon bacilli; encysted stone in which without the assistance of the cystoscope the calculus would probably have escaped observation; and papilloma and sarcoma of the bladder. He then demonstrated the appearances of the ureteral orifice in stone impacted in the orifice; calculus impacted in the ureter; the appearances presented in descending ureteritis in a case of pyonephrosis with impacted calculus in the left ureter three inches above the bladder; recent ascending ureteritis from a case of acute septic infection of the bladder; and saucer-shaped ureteral orifice in a case of acute pyonephrosis. The escape of blood, stone, urine, and blood clots from the ureter was then demonstrated. Dr. Newman pointed out that when one ureteral orifice was altered, while the other was normal, the renal lesion was on the side of the morbid ureter. The urine normally escaped from the ureter in distinct jets; dilatation of the ureter without paralysis of the sphincter was indicated when the urine dribbled into the bladder at intervals; destruction of the sphincter action was shown when the urine flowed into the bladder almost continually. The character of the morbid fluids—e.g., pus—escaping from the ureter or clots occupying the opening denoted the morbid changes taking place in the corresponding kidney. The deformity of the ureteral orifice also indicated the character of the renal disease; thus, pin-head contraction suggested chronic inflammation or impacted calculus; elongated and distorted orifices implied distension of the renal pelvis or infective nephritis; swollen or pouting orifices suggested prolonged but not acute inflammation of renal parenchyma; and dilated orifices indicated advanced tuberculous or calculous pyonephrosis.

Mr. EDRED M. CORNER and Mr. CECIL W. ROWNTREE reported a case of Tuberculosis in a Diverticulum of the Bladder found in an Inguinal Hernia. The patient was a boy, aged 18 months, who was operated on for what was diagnosed as an irreducible inguinal hernia. No peritoneal sac was found but a diverticulum of the bladder containing a few drachms of urine was excised. The diverticulum was two inches long and lined in part with a smooth membrane like that of the bladder. At the lower pole it was enormously thickened and resembled an os uteri. Microscopical examination revealed the presence of tubercles. The bladder and the inguinal canal were sutured, the wound healing by first intention. Two months later the boy was readmitted to the Hospital for Sick Children, Great Ormond-street, for tuberculous peritonitis. Laparotomy was done, a large quantity of fluid was evacuated, and the viscera were found to be covered with miliary tubercles. From this date the boy steadily improved and was now very well, a year after the operation for hernia. Mr. Corner and Mr. Rowntree presented a review of the recorded cases of hernia of the urinary bladder.—The PRESIDENT remarked that he had several times seen the bladder in operations for hernia but the case recorded was probably unique. He remembered seeing miliary tuberculosis of a sac once, the operation being followed by tuberculous peritonitis. In the present case he thought that the diverticulum might have been produced through the tuberculous disease.—Dr. W. H. B. BROOK (Lincoln) had seen a case in which hæmaturia followed on operation for the radical cure of hernia. At a subsequent operation it was shown that a portion of the bladder had been excised.—Mr. CORNER, in reply to the PRESIDENT, said that the lump had been present since birth and therefore it was probably not secondary to the tuberculous disease.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Oct. 13th, Sir Shirley F. Murphy, the President, being in the chair.—Dr. Charles Sanders opened a discussion on the Relation of the Medical Officer of Health to the Medical Practitioner with respect to the Administration of the Infectious Disease Notification Act. He spoke from the point of view of the medical officer of health who devoted the whole of his official time to the duties of his office and who had no direct control of a hospital. The discussion was to see whether some steps could not be taken to reduce the number of cases improperly sent to the hospitals of the Metropolitan Asylums Board. The reports of that Board showed that during last year about 10 per cent. of the cases admitted were not suffering from the disease certified. He considered that the cases which had been apparently erroneously diagnosed arose largely from a desire on the part of medical men to make a speedy diagnosis rather than to suspend judgment and wait until sufficient evidence was forthcoming to diagnose the disease properly. For the purpose of discussion he laid down the following propositions: (1) that the irregular diagnoses under the Notification Act would diminish in number by effluxion of time, owing to the improved professional training of the members of the profession in infectious diseases; (2) that the statutory duties at present devolving upon the medical officer of health precluded his undertaking consultative work in relation to infectious disease; (3) that the relationship was already laid down in the decisions of the Local Government Board and that it was contrary to public and professional interest that such relationship should be altered; and (4) that it was expedient for hospital authorities to endeavour to arrange for a larger isolation of suspicious infectious cases than existed at present.—Mr. J. Howard-Jones dealt with the question from the point of view of the provincial whole-time medical officer of health whose duties included the superintendentship of the fever hospital and who acted as bacteriologist. The administration of the Act under discussion was most efficient where it was possible for the medical officer of health to know the general practitioners of his town and be looked upon by them as a friend ready to assist in all difficulties under the Act. The larger the town the greater was the official distance between the medical officer of health and the medical practitioner. In districts where isolation of infectious disease was not carried out there was a greater likelihood of doubtful cases being notified than in places where the routine for such cases was to send them to the hospital. He advocated that corporations should provide a supply of antitoxins for general practitioners for three reasons. First, every means which helped to render the medical officer of health serviceable to the general practitioner reacted in favour of a satisfactory working of the Notification Act. Secondly, it brought the medical officer of health and the general practitioner together as early as possible in dealing with cases of infectious diseases such as diphtheria and puerperal fever. Thirdly, it afforded the medical officer of health an opportunity of impressing upon the general practitioner the importance of using diphtheria antitoxin as a preventive in the case of "contacts" and thus obtaining his assistance in preventing the further spread of the disease.—Dr. J. G. Glover said that he believed that with tact on both sides there should not be the slightest difficulty in reducing the errors in diagnosis. He thought it should not be possible to hold the medical practitioner responsible for the diagnosis in a case which he was not sure about and it should be possible and legal for him to ask for the assistance of the medical officer of health. A great deal of error arose from the haste in diagnosis; instead of hurrying off a patient in the first 24 hours he should be kept at home for a time and he suggested it would be desirable to make the removal from home within a certain time only optional and not compulsory. Let the responsibility of the medical practitioner be preserved as far as possible and when that was done there would be no serious

difficulty in meeting the views of the medical officers of health.—Dr. E. W. Goodall said that the largest number of cases diagnosed as diphtheria and discovered to be something else were cases of measles, laryngitis, stomatitis, tonsillitis, and acute inflammatory infections of the tonsils and neighbouring parts. In the present state of bacteriological knowledge he was sure that in respect to a large number of cases of tonsillitis the general practitioner was right in certifying them as diphtheria. It was impossible to diagnose diphtheria from tonsillitis unless time was taken. A very large proportion of the cases which were sent in error were extremely difficult for the general practitioner to diagnose unless he waited a long time, and in so waiting a great deal of mischief might be done from the point of view of both isolation and treatment. It had been insinuated in the public press that those doubtful cases were sent up to the hospital and lumped together with the general run of cases, that they were all sent into the general wards, and that if a patient was certified to have scarlet fever and he was not found to have signs of it he went into the scarlet fever ward and thus ran the risk of getting the disease. That was an absolute lie as far as the Asylums Board was concerned. The Board had a very large accommodation for the doubtful cases and steps were being taken to make it even larger.—After Dr. J. F. J. Sykes had commented on the report of the statistical committee of the Metropolitan Asylums Board Dr. Reginald Dudfield urged that the medical officers of health should render assistance and advice to any practitioner applying for help. —The discussion was continued by Dr. W. F. Brown (Ayr), Dr. W. Butler, Dr. W. A. Bond, and Dr. R. K. Brown.— The President concluded the discussion with an intimation that the reports in the press would indicate the feeling of the society on the matter.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Oct 12th, Dr. William Alexander, the President, being in the chair.—Dr. Bedford Fenwick read notes of a case of Pulmonary Embolism occurring directly after removal of a polypoid growth from the cervix uteri. The patient was aged 53 years and was the mother of two children, the youngest of whom was born 13 years ago. She had complained of profuse uterine hæmorrhage for two years previously. There was a history of rheumatism, she was anæmic, and had a rough systolic apical bruit but was otherwise in fairly good condition. The uterus was enlarged and nodular on the surface and had a small growth attached to the cervix. This growth was easily removed under anæsthesia produced with nitrous oxide gas and ether. The operation occupied less than one minute and there was no bleeding. Eight hours later the pulse increased in frequency and the patient complained of insomnia and dyspnœa; four hours later the pulse-rate was 130 and the temperature was 102° F., with rapid, shallow respiration. There was no uterine or vaginal hæmorrhage and the cervix appeared to be normal. Unconsciousness came on and death ensued 18 hours after the operation. At the necropsy several fibroids were found in the uterus; on opening the heart the tricuspid valves were seen to be diseased; on the edge of one cusp there was a calcareous nodule of about the size of a split pea, from which a decolourised clot extended through the ventricle into the pulmonary artery, where it bifurcated, one branch extending for two inches into the left pulmonary artery, while the other passed one and a half inches into the right pulmonary artery, almost blocking both of them; both lungs were œdematous.—Dr. H. Macnaughton-Jones showed a specimen of Primary Tubercle of the Fallopian Tubes which was removed from a patient, aged 33 years, who had suffered from periodic metrorrhagia and pelvic pain. She had been married one year. There was no history of tubercle. Oöphorectomy was performed with some difficulty owing to the numerous adhesions. On examination tubercles were found in the mucosa of both tubes; the right ovary was œdematous but the left one was healthy.—Dr. Bedford Fenwick read a paper entitled "Four Years of Hospital Abdominal Surgery." He said that hospital records had certain advantages over private records owing to their greater accuracy and the critical remarks of colleagues. Better results were obtained in private practice than in hospital work owing to the more favourable environment in the former case. Fatal results were sometimes due to causes outside the purpose for which the operation was undertaken. The records on which the paper was based extended from March, 1901, to the end of February, 1905. The cases of abdominal section were 185 in number and comprised 55 cases of hysterectomy, 121 operations for the removal of diseased appendages, and three exploratory operations where inoperable malignant growths were present. In the list there were several cases of ectopic gestation, ventral hernia, and hysteropexy for extreme prolapse of the uterus. Of the 121 operations for adnexal disease three were followed by death and 118 by recovery. In the 55 cases of hysterectomy three patients died and 52 recovered. In the other operations all the patients were discharged recovered. Briefly, therefore, out of 185 patients operated on six died and it was interesting to notice the cause of death in each. In 1901 one patient died upon whom panhysterectomy had been performed for malignant disease of the cervix; there was tricuspid and mitral disease following rheumatic fever and death occurred on the fifth day from heart failure. In 1902 two patients died. The first was a case of cystic degeneration of an old fibroid in an unmarried patient, aged 61 years; after hysterectomy she did well for nine days; diarrhœa and vomiting then came on and the wound between the umbilicus and the ensiform cartilage became ruptured and the intestines protruded; the wound was at once sutured but heart failure supervened in a few hours. The second fatal case was one of hysterectomy with advanced mitral disease; death took place from collapse three days after the operation. Between January and April of 1904 three patients died—one from septic peritonitis, one from pneumonia, and a third from pulmonary embolism. The true mortality would therefore be one out of 185. From a consideration of these and other cases the following general principles might be urged. Firstly, a fibroid tumour of the uterus occurring in a patient, aged 40 years or over, and filling the pelvis in the majority of cases exercised dangerous pressure on the rectum, bladder, or ureter, and should therefore be removed; secondly, in such a patient a fibroid tumour which extended half-way to the umbilicus and was hard and nodular should be removed, as it would sooner or later undergo degenerative changes; and, thirdly, where the patient suffered from frequent and prolonged losses of blood unchecked by rest or medicine and the uterus was nodular and enlarged to the pelvic brim, hysterectomy ought to be performed as the safest and most certain treatment for the condition. With reference to the cases of tubal disease, these could be operated on with infinitely greater safety to the patient than was involved in the risk to her health by any less radical operation.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Oct. 12th, Mr. C. B. Lockwood being in the chair.—Dr. Alexander Morison showed a case of Mitral Constriction in which there had been lost compensation with much ascites. After the removal of the fluid by paracentesis recurrence of ascites was prevented by circular strapping of the abdomen. There was, when the patient was exhibited, slight recurrence, which did not incommode the patient, and it was quite possible that he might again require paracentesis, but Dr. Morison considered this view of treatment to be preferable to the more heroic measures advocated by some surgeons. His remarks applied equally to cardiac and primarily hepatic cases.—Dr. Morison also showed a man, aged 46 years, who had, six years ago, had an attack presumably of syphilis but who had enjoyed good health until 12 months ago, when he had an illness regarded as pleurisy in the left side by his medical attendant. The patient ignored the condition and although increasingly breathless continued his work after a short pause. His heart was now much displaced to the left. There was percussion dulness with diminished inspiration over the greater portion of the left lung but at the base posteriorly the note was comparatively clear and breath sounds could be heard. There were no moist sounds. In the upper part of the left chest anteriorly there was some pulsation of a uniform character and the pulmonary arterial second sound was palpable to the hand. The patient had a peculiar ringing cough, but his voice was not affected nor were the vocal cords paralysed. The reaction to light of both pupils was equal. While the suggestion of aneurysm of the arch of the aorta was obvious Dr. Morison was inclined to believe that the case was one of retracted left lung with exposure and displacement of the heart. The skiagram showed a dark shadow in the left chest but no definite evidence of aneurysm of the aorta such as would push the heart so much to the left.—Dr. Maurice F. Squire showed a case of Secondary Carcinoma of the Liver with Enlarged Gall-bladder and Jaundice.—Mr. J.

Jackson Clarke showed a girl, now aged eight years, on whom he had operated by the manipulative method more than two years ago for a Congenital Dislocation of the Right Hip. The child had never walked properly before the operation and she had attended a hospital for three years wearing a high boot. When lying down there were one and a quarter inches of shortening and the great trochanter was elevated to the same extent. The patient was easily fatigued. A skiagram confirmed the diagnosis. At the present time there was no shortening, the great trochanter was in Nélaton's line and the right limb was in every respect the same as the left, and the patient walked well without fatigue. A skiagram showed the present appearance of the right hip to be normal. In other words, the patient had been cured of a congenital dislocation of the hip.—Mr. Clarke also showed a boy, aged six and a half years, with Double Congenital Dislocation. Both hips were gravely deformed and there was much lordoris. The trochanters were two inches above Nélaton's line and the thighs could only be separated for 30° instead of the normal 135°. The gait was awkward and slow and fatigue was readily felt. The boy was severely handicapped for earning a livelihood and for most games and exercises. With increasing years these disabilities become more irksome unless the treatment that had succeeded in the first case were carried out soon.—Mr. E. Laming Evans called attention to the thickening of the soft tissues round the joint which still persisted and attributed the limp which remained to this thickening. He was doubtful if so good a result was possible in every case and was of opinion that in over 50 per cent. the reduction had been transformed into a transposition at the end of two years. Even then the functional improvement was marked.—Mr. Laming Evans showed a case of Tuberculous Disease of the Right Knee-joint in a girl, aged seven years, which had been treated continuously for two years by a Thomas's splint with extension. Notwithstanding this period of fixation flexion of 45° was possible. Shortening of a quarter of an inch only was present, otherwise there was no deformity. All apparent disease had been arrested and passive and active movements were about to be commenced to obtain the full range of flexion.—Mr. Laming Evans also showed a lad, aged 17 years, suffering from Spastic Paraplegia who had recently come under his care. In early childhood the tendo Achillis had been divided and a secondary calcaneus had developed. He attributed this to the flexion of the knee-joints which had increased with growth and recommended that in such cases the flexion of the knee-joints should be corrected before the equinus, and that the knee-joint should be kept in extension by a suitable appliance so long as the spasm of the ham-strings persisted.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held on Oct. 6th, Dr. Robert Sinclair, the President, being in the chair.—Professor A. R. Simpson delivered the inaugural address for the ensuing session, the subject of his discourse being Criminal Abortion, as studied from an ethical point of view. He said that it was one well worthy of the attention of medical practitioners, for the crime of procuring abortion was too common and the suspicion of its occurrence gave rise to delicate and difficult inquiries. The practice had been common at all times and among all kinds of people. Many Greek philosophers had spoken of it with approbation and many historical references showed that it was extensively resorted to by the ancient Romans among all classes of the community, from members of the Imperial household to the meanest slaves. This practice common amongst the nations of antiquity had been continued through the centuries and was found not only amongst savage races in all quarters of the globe but amongst nations who had developed the highest form of civilisation. Although legislative codes provided for the punishment of those found guilty of participation, rarity of conviction was no indication of rarity of the crime. The number of men and women who were known to make a business of procuring abortion was probably greater in America than in Britain but recent prosecutions in London and Edinburgh were still fresh in the memory of all. Professor Simpson then considered the subject of criminal interferences and stated that those married women of ample means who shirked the duties of maternity as it interfered with their round of society pleasures were greatly to be condemned. The culprits were various and amongst them were miscreants, male and female, who traded on the unwholesome fears and desires of misguided women. THE LANCET did good work in 1898-99 in exposing those people. Most of all to be reprobated were those members of our profession who sold themselves and degraded their diplomas by being participators in the crime. The methods of procuring abortion by various drugs possessing alleged abortifacient properties and by numerous instruments were detailed and the consequences which followed these methods were discussed. Professor Simpson said that greater mortality was attached to criminally provoked abortions than to those coming on from other causes, the reason being obvious, and that many a life had been lost in attempts to procure abortion where no pregnancy existed. The procuring of abortion might be regarded as a crime against the State, in that it was not only an infraction of special statutes but was also opposed to the object and intention of marriage, which was the legal institution for the propagation of the race. It implied danger to the health and life of the mother and above all it implied destruction of the life of the infant, fœtus, or embryo. Jurisprudence therefore regarded the procuring of abortion as a crime and imposed a punishment, and it was proper that the medical profession should aid in seeking out the felon. He considered that the law was not strict enough in this country but as a remedy he looked more to educational than to judicial measures. The tendency to diminution of the birth-rate was a serious matter and must engage earnest attention. He quoted several apt passages from Mr. Coulson Kernahan's book, "A World Without a Child," and said that the diffusion throughout the community of such high ideals on the subject of marriage would do much to arrest the tendency to diminution of the birth-rate. Professor Simpson then discussed marriage from the point of evolution and quoted passages from an article on the Ethics of Marriage and Divorce by Dr. Woods-Hutchinson, who had traced the evolution and development of man from a group of monogamous apes—the marriage of civilisation being monogamy. He showed how the modern novelist and the modern man of science alike inculcated the necessity of wholesome marriage ideals for the race and nation. It had been noted that there was no tendency to diminution of birth-rate amongst the Jews and that criminal abortion was rare among their women. This was what might be expected amongst a people who for centuries enjoyed the highest code of morality and who read on the first page of their history as the primal command of the Deity "Be fruitful, and multiply and replenish the earth."

HUNTERIAN SOCIETY.—The opening meeting of the session of this society was held on Oct. 11th, the President, Dr. F. J. Smith, being in the chair.—Dr. H. Lewis Jones delivered the first Hunterian lecture on Some New Lines of Work in Electro-Therapeutics. After alluding to the increased facilities for the use of electricity he gave a brief sketch of the growth of electro-therapeutics, beginning with the work of Duchenne, Remak, and Erb. He pointed out the great advances made possible by the introduction of public supplies of current for electric lighting and showed that the invention of the Edison-Swan lamp had rendered possible the surgical exploring lamp which had been particularly advantageous for cystoscopy and for the illumination of the antrum. The importance of the therapeutic uses of the Roentgen rays was insisted on. Dr. Jones pointed out that as the more serious conditions of disease came under the care of the medical electrician and as the methods became more precise, so the work would tend to fall less into the hands of unqualified electricians. He thought that high frequency currents and the light bath were destined to lose the prominence which they had enjoyed recently. Electrolysis had done good service for many years in the treatment of nævi, &c., but recent work opened up a far wider field for electrolytic applications—viz., the introduction of chemical substances into the body for local medication. The writings of Professor Leduc of Nantes on the Ions in Medicine had led Dr. Jones to treat some cases of rodent ulcer and of lupus by the electrolytic introduction of zinc ions, using for the purpose a 1 per cent. solution of zinc chloride. The result of this treatment of rodent ulcers was extraordinarily encouraging, two cases at least being perfectly healed by a single application and remaining so up to the present time, after a lapse of from six to nine months. His results on lupus had not been so successful but they were sufficiently good to encourage him to persevere in the attempt to treat that disease by electrolytic applications. The electrolytic introduction of substances differed from subcutaneous injection because the

latter conveyed the injected substances into the lymphatic spaces, while the former forced the ions into intimate union with the protoplasm of the actual cells.—A short discussion followed, questions being asked by the President, Mr. Hope Grant, Mr. F. R. Humphreys, and Dr. H. Russell Andrews.

MEDICO-LEGAL SOCIETY.—At the opening meeting of the autumn session of this society Dr. John G. Garson, a member of the council, delivered an address on the subject of Finger-print Evidence. He dealt with finger prints from both the medical and legal points of view, explained the nature of the creases and ridges of the palm and fingers, and demonstrated the precise method of taking such prints. By means of lantern slides he showed clearly the varied kinds of prints obtained, which were classified as the arch, the loop, the whorl, and the composite, the latter being usually a combination of the loop and the whorl. The relative frequency of occurrence of the different patterns was in round numbers—arches, 5 per cent.; loops, 60 per cent.; and whorls, 35 per cent. It was comparatively uncommon to find the same pattern on the ten digits of one individual but between the two hands of the same person there was a certain amount of co-relation, which was most marked on the middle fingers. On the question of the value of finger-print evidence Dr. Garson urged the necessity of examination with great exactitude and with a knowledge of anatomy and physiology; he also maintained that the evidence of discrepancies in prints under examination was of the utmost importance. To be led away by resemblances without weighing the evidence of differences was only too likely to result in an erroneous conclusion. This was especially the case in comparing casual and "unintentional" finger prints with those carefully taken. The staff of the prison service received special training in the taking, reading, and classification of prints. From evidence obtained up to the present time by means of the examination of thousands of prints, it was shown that no two sets of prints of even a single digit had been found identical unless they belonged to one and the same person, and comparisons of prints of the same digits after a series of years showed that there had been no material change.—The President of the society for the ensuing year is the Hon. Sir John Walton, K.C.; the retiring President, Sir William J. Collins, Dr. Henry O'Neill, Dr. W. Wynn Westcott, and Dr. F. J. Smith, have been elected Vice-Presidents. The new members of council are Mr. D. Cotes-Preedy, Dr. F. S. Toogood, and Mr. J. Wells Thatcher. Mr. R. Henslowe Wellington and Dr. Stanley B. Atkinson have been re-elected as honorary secretaries.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—The first meeting of this society for the present session was held on Oct. 9th, Professor Robert Muir, the President, being in the chair.—Dr. John H. Teacher showed an Enlarged Heart with atheromatous aorta, thickening of the aortic curtains, and complete obliteration of the pericardium. In the same case there was also present a healed localised empyema.—Dr. A. N. McGregor showed an infant from whom he had successfully removed a large Teratoma of the Neck when the child was three weeks old. The tumour was present at birth and was situated on the left side of the neck extending from the middle line in front to the sterno-mastoid muscle posteriorly and reaching from about the level of the clavicle upwards to the middle of the cheek. The operation presented difficulty on account of the tumour interfering with respiration in certain positions and this was one of the reasons which determined its removal. It was regarded as probably of the nature of a branchial anomaly, although the possibility of its relationship to an accessory thyroid was also entertained.—Dr. J. Walker Downie showed two patients on whom he had successfully operated for Persistence of a Branchial Cleft. One was an example of the complete branchial fistula while the other was an incomplete internal fistula.—Mr. H. E. Clark showed a Large Kidney which he had removed on account of Calculous Pyonephrosis. The patient made an excellent recovery. He also showed a plaster cast and skiagraphs of an unusual case of Multiple Digits. The case suggested an indication of the presence of the elements of another hand.

SOUTH-WEST LONDON MEDICAL SOCIETY.—The first monthly meeting of the winter session of this society was held at the Bolingbroke Hospital, Wandsworth Common, on Oct. 11th, Dr. M. Mackintosh, the President, being in the chair.—Dr. H. Campbell Thomson read a paper on the Prognosis and Treatment of Cirrhosis of the Liver. After reviewing some of the changes which the liver undergoes, the prognosis and treatment of the stage of ascites were specially dealt with, and it was pointed out that ascites might be due in some instances to a combination of chronic congestion and peritonitis, while in others it was one of the symptoms of a general toxæmia. The prognosis in the former, which might be looked upon as more or less a local condition, was much better than that of the latter which usually denoted that the end was very near and it was those cases where the ascites depended upon congestion and peritonitis that were relieved by frequent tapping or by an operation. The indications and contra-indications for tapping and laparotomy were considered and statistics concerning the latter were discussed. The possibility of forming intra-peritoneal adhesions in suitable cases by means other than laparotomy was mentioned and reference was made to cases recorded by Plant and Steele[1] in which successful results were obtained by the injection of adrenalin chloride.

BOURNEMOUTH MEDICAL SOCIETY.—The annual meeting of this society was held on Oct. 11th.—Dr. E. Hyla Greves delivered the Presidential opening address, his subject being Theory and Science. He said that it was to the theorist rather than to the so-called practical man or empiricist that the advances which had been made in medical treatment were due, for almost every procedure in medicine or surgery was made in response to some theory of the nature of the disease. He further urged that the theory of the duality of the mind, the one mind conscious, the other below the threshold of consciousness, helped in the solution of psychological problems and, finally, that the theory of electrons modified our views of the whole universe.

WIGAN MEDICAL SOCIETY.—The annual meeting of this society was held on Oct. 12th when the following office-bearers for the ensuing year were elected:—President: Dr. John Blair. Committee: Mr. James Chronnell (ex-President), Dr. Matthew Benson, Dr. Ferdinand Rees, Mr. Thomas M. Angior, Mr. Charles M. Brady, Dr. R. Prosser White, and Dr. George Wolstenholme. Treasurer: Mr. E. H. Monks. Secretary: Mr. William Berry.—The meeting was followed by the annual dinner at which many members and visitors were present.

Reviews and Notices of Books.

Text book of Hygiene based on Physiology for School Teachers. By A. WATT SMYTH. London: Simpkin, Marshall, and Co. Pp. 272. Price 6s.

THIS book has been written with the object of supplying the information necessary for the instructors of our young in board schools and similar places of education if they are to follow out certain advice contained in the "Suggestions for the Consideration of Teachers and Others concerned in the Work of Public Elementary Schools" which was issued this year by the Board of Education. The author's idea has been to place in the hands of teachers a text-book of hygiene founded upon physiology, so that they may understand the scientific reasons for the various forms of sanitary regulations which they ought to enjoin. We think that the idea is a thoroughly sound one. Hygiene is not only concerned with the prevention of disease; it deals equally with the preservation of health. Now physiology implies the study of the various processes of living as they are present naturally and uncontaminated by environment or human interference—that is, the study of these processes as they should occur in what we call health. So that if the teachers at children's schools can learn in an elementary but comprehensive manner the subjects of physiology and hygiene together from one and the same treatise they will understand the laws of health from their foundation instead of empirically and will be better able not only to manage the school-room hygienically but also to teach personal and domestic hygiene to the scholars.

[1] Brit. Med. Jour., July 15th, 1905.

The author carries out her idea well. After clearly written sections upon the general characteristics of the human skeleton, the mechanism of the circulation of the blood and the respiratory system, we find an explanation of the occurrence of contamination of the air and the origin and dangers of the usual impurities, together with the methods which have to be employed for the heating and ventilation of schoolrooms. A rather larger section deals with the digestive system, the minute pathology of which is given in considerable detail as a preface to a chapter upon the utilisation of food by the tissues. This is a particularly valuable section of the book. Theories, precepts, and rules concerning the feeding of the young abound in many pamphlets and in many teachers' minds. For the most part the advice given is, we are glad to remember, sound, so that good information upon these points is not particularly hard to come by, but in the book under review the usual foods are very carefully classified in regard to their chemical constitution and the energy derived from them in such a way that it is easy to understand why, in a household of moderate means, it is justifiable to spend a good deal of money on milk and why a too exclusive diet of tea and bread-and-butter is bad. A small section on the social and moral aspects of alcoholism would seem to show that the author is of the opinion, very commonly held in this country and practically acted upon in certain of the States of America, that the teachers in board schools should attempt to impress the young under their charge with the evils directly attributable to the use of alcohol. The view has much to recommend it, but it serves no purpose for the teachers in their zeal for temperance to fill their pupils' minds with stories which facts will not support; this must be remembered. In treating of the special senses the author writes upon the hygiene of the eye and ear with some minuteness, recognising that teachers must be in a large measure responsible for the care of the eyesight of children in their classes. The mischief that may be inflicted on children by badly lighted schoolrooms and desks arranged at inconvenient angles ought to be present to the minds of all teachers who ought to be able to assist the medical inspector by pointing out to him as the result of observation which pupils appear to be suffering from eye strain, where deafness seems to point to the presence of adenoids, and so on. The chapter on the muscular system includes a syllabus of physical exercises conducted in accordance with the physiological action of the joints. This is a very valuable part of the book for the theory of such exercises should be properly understood by those who have to train physically young and developing children. The author, in a modest little preface, acknowledges her indebtedness for information upon many technical points to Miss Turner, the inspectress of elementary schools in London, Dr. Dawson Williams, and Mr. S. G. Shattock through whose help some very good photographs and skiagrams have been obtained for illustration of various points in the book. The excellent annual reports of Dr. James Kerr, the educational medical officer for London, have also been laid under contribution to enable Mrs. Watt Smyth to produce a comprehensive and accurate as well as a really interesting book.

Clinical Lectures on Appendicitis, Radical Cure of Inguinal Hernia, and Perforating Gastric Ulcer. By G. R. TURNER, F.R.C.S. Eng., Surgeon and Joint Lecturer on Surgery, St. George's Hospital. London: Baillière, Tindall, and Cox. 1905. Pp. viii.–136. Price 5*s.* net.

THERE is a very definite rôle for the clinical lecture. It does not usurp in the least the place of the lecture on the very same subject occurring in a systematic course. It deals, mainly at least, with the clinical aspect and especially it refers to, and is based on, actual cases. The clinical lecture can be best appreciated when heard, for the *res viva* has in teaching a value peculiarly its own. The next best thing, however, to listening to a clinical lecture as it is delivered is reading it in a book and we always welcome the appearance in book form of clinical lectures. To the practitioner in distant parts of the country the perusal of lectures such as those contained in the work before us will do much to keep him abreast of the times, and that in a very pleasant way. The subjects dealt with in these lectures are some of the most important of the present day. Appendicitis, in spite of the many papers and treatises published, has still many questions which need solving, and the best solution is, we think, to be found in a careful consideration of a long continuous series of cases. This Mr. Turner has done. He has taken the 140 cases of appendicitis on which operation had been performed at St. George's Hospital from 1895 to 1905. These he has analysed and he gives us the deductions which he has drawn from them. We will not detail all the conclusions at which the author has arrived, for these we must refer the reader to the lectures themselves, but we may mention that Mr. Turner is strongly in favour of operating on all acute cases as soon as possible. He is not in favour of the "gridiron" method of operating in acute cases as it does not give much room, though for simple chronic cases it may do very well. In cases of abscess he removes the appendix only when it can be seen to be readily removeable. The lectures on the radical cure of inguinal hernia are equally interesting and valuable. Mr. Turner employs a modification of Bassini's operation, placing the spermatic cord behind the conjoined tendon. As to the result, the last 653 cases of radical cure of inguinal hernia at St. George's Hospital have been without a death. The two lectures on perforating gastric ulcer are also good. The author describes nine cases in which an operation was performed and of these eight recovered.

We commend this little book to the notice of all those who wish to become acquainted with the present state of our knowledge of the subjects with which it deals.

Essentials of Human Physiology. By D. NOEL PATON, M.D. Edin., F.R.C.P. Edin. Second edition, revised and enlarged. London and Edinburgh: William Green and Sons. 1905. Pp. 444.

WE are glad to see that Dr. Noel Paton's book has arrived so soon at a second edition. It appears to have been revised with much care. Numerous though minor alterations have been made, such as the use of heavier type to accentuate the divisions of a subject or to call the attention of the student to important points and the introduction of new illustrations. Under the head of the Circulation we find that outline drawings of the position of the cardiac valves, of the cardigraph, of the intracardiac nervous mechanism, and of the Hill-Barnard sphygmometer are inserted; the effects of period of life on the rate of heart beats and the structure of the vessels have been added and the work of the heart has been more correctly stated by changing the position of the decimal points. In like manner in the account of the nervous system various additions have been made, as, for example, a paragraph on hypnosis, which is explained as a condition allied to sleep produced in many individuals by powerfully arresting the attention and probably due to a removal of the influence of the higher centres over the lower, and several new woodcuts of the nerves have been introduced. It is said of tea and coffee that they tend to paralyse the sensory mechanism of the brain and hence to abolish the sense of fatigue; they stimulate the heart and the secreting action of the kidneys, but they have no effect upon the metabolism. Why is the action of tobacco in these respects passed over in silence? The succus entericus, which in the first edition was stated

to contain only one enzyme, is in the present condition credited with four; an enzyme which splits some disaccharids; in sucklings, lactase, which splits milk sugar; erepsin, which breaks up peptones and many other proteids; and entero-kinase, which converts trypsinogen into active trypsin. It will thus be seen that various improvements have been made in this work without materially increasing its size. If it be read with a good practical treatise on physiological chemistry, combined with a course of practical physiology in a well-appointed laboratory, the student will acquire all that he needs to know on this fundamental subject.

Signacula Medicorum Ocularium. Recensuit AEMILIUS ESPÉRANDIEU. Accedunt Tabulae LXVIII. Parisiis apud Ernestum Leroux. MDCCCCV. Pp. 260.

A WORK to which Captain Émile Espérandieu has devoted many years has been accomplished by the publication under his editorship of all the Roman oculist seals known up to the year 1904. The book is in Latin and forms a volume of the Corpus Inscriptionum Latinarum, with numerous notes and comments in French, and enriched with no less than 187 reproductions, in diagram, of the signets themselves. The work extends to 260 pages, 174 of print, giving all the information necessary to a perfect appreciation of these seal inscriptions in the most condensed form possible. The volume commences with a bibliography of works of original research upon the subject, beginning with a monograph by a medical author, Johannes Bavhin of Stuttgart, dated 1616, and terminating with a treatise by Rodolfo of Castille who, in 1903, printed at Madrid "La Oftalmologia en tiempo de los Romanos," in it referring chiefly to a seal discovered at Tarragona. The additional bibliography of short dissertations upon the various seals, such as have appeared in THE LANCET and archæological journals from time to time, is placed in the list of printed references to each seal appended in succession throughout the Corpus. The description of the signacula themselves is naturally the most valuable portion of the work and it is in the emendations of the frequently mutilated and scarcely legible texts, and the amplification to their full form of the almost invariably much abbreviated inscriptions, that the industry, erudition, and talent of Captain Espérandieu are manifested.

Following upon the Corpus itself are a few pages referring to the substances stated by ancient authors to have formed the ingredients of a few of the collyria; also the chemical analysis is given of two small specimens of collyria that have been discovered. As their ingredients throw a light upon the recipes of Roman oculists we give the first of them in full.[1] This was published in the *Journal de Pharmacie et de Chimie*, 1863, vol. i., p. 98: "Matière organique azotée, 33·33; silice, 4·00; peroxyde de fer, 16·00; oxyde de plomb, 23·00; oxyde noir de cuivre, 4·32; carbonate de chaux, 17·66; perte, 1·69: 100·00."

Two pages are devoted to inscriptions giving names only of collyria that have been found upon small vases and vessels, mostly of lead. The majority of these are merely fancy names calculated to impress the laity, such as *'Αρτεμιδώρου λυχνον*, *'Ηρακλείου*, *Νυμφοδώρου*. An index to all the personal names is provided. Among the cognomena is one in Greek, *Κόσμος*. It is interesting that Marcellus in his "De Medicamentis" gives four remedies as invented, or freely utilised, by a physician named Cosmus. Of one of these, for the eyes, he says: "Collyrium quod habuit Cosmus medicus inter arcana, mirificum ad omnia oculorum vitia." Juvenal and Martial speak of a Cosmus celebrated for the making of perfumes. The seal may not have belonged to a personage named Cosmos but have merely enumerated three collyria invented by the celebrated Cosmos of Marcellus. Those given on the seal are *ἁρμάτιον* (harnia), *αὐθήμερον*, and *μήλινον*. The long lists of collyria and diseases will be the foundation for a treatise which can now be undertaken, as the material provided is ample, upon the whole subject of the armamentarium of the Roman oculists, but it is also necessary in order that the work may be complete to utilise the unpublished manuscript of the "Dynameron" of Elius Promotus in the Escurial library, some 16 chapters of that work being devoted to diseases of the eyes.

It is curious how frequently incense under the titles dialibanum, or turinum, and thurinum, appears to have been employed, it being advised upon 15 seals. Marcellus and Celsus recommended its employment and Galen, speaking of incense, says: "Et expurgare et implere quae in oculis consistunt ulcera videtur." So efficacious was it that two oculists[2] lapsed into verse on the subject, Floridus Macer saying:

> "Thus calidum siccumque gradu dixere secundo
> Lumina clarificat, lacryma si solvitur ovi
> Contritum vel femineo cum lacte tepenti."

Of course the use of lac muliebre in the manufacture of oculists' collyria is a common advice of classical medical writers and is set forth upon these seal inscriptions over and over again. In Captain Espérandieu's Corpus is a seal which is we believe hitherto unpublished, hailing from Cirencester, and as of British origin is of peculiar interest as a specimen of a very complete oculist inscription. The importance of the text to vulgar eyes is guaranteed by the impressive presence of the mysterious Svastika sign.

Space will not permit of any further comment upon this volume but to those who have retained some recollection of their Latin we can hardly suggest a more interesting book for perusal than this new compilation of the "Signacula Medicorum Ocularium."

LIBRARY TABLE.

Adenoid Growths of the Naso-pharynx: Diagnosis, Symptoms, and Treatment. By G. A. GARRY SIMPSON, M.R.C.S. Eng., Clinical Assistant to the Throat, Nose, and Ear Department, West London Hospital; Surgeon to the Acton Cottage Hospital; Medical Officer of Health of the Acton District Council. London: John Bale, Sons, and Danielsson. 1904. Pp. 43. Price 3*s.* 6*d.* net.—This is a useful little book containing nearly all that is known with regard to adenoid vegetations of the pharynx. The etiology is discussed fairly fully but the author does not very definitely express his own opinion, though he seems inclined to think that adenoids are probably due to the spread of an infective rhinitis from the nose to the pharynx. The symptoms are well described and several reproductions of photographs show the effects of the presence of the adenoids. The chapter on "When to Operate" is judicious. The operation is described; the author prefers ethyl chloride for the anæsthetic, as, in fact, do most operators at the present day. As to the instrument employed there seems to be a little ambiguity, for we are told: "Gottstein's curette ..... is now universally used. Löwenberg's forceps are still, however, preferred by a few surgeons." The book should prove of value to those who wish to obtain more information about the operation than is to be found in the ordinary text-books.

Photographic Atlas of the Diseases of the Skin. In four volumes. By GEORGE HENRY FOX, A.M., M.D., Professor of Dermatology, College of Physicians and Surgeons, New York; Consulting Dermatologist to the Department of

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[1] Galen gives a collyrium he terms *ἁρμάτιον*: "Aeris usti et loti, drachm. 8; ammoniaci thymiamatis, ditto; lapidis haematitae, ditto; corticis thuris, ditto; gummi, ditto; excipe aqua pluviali ac utere cum aqua." Alexander of Tralles gives another he calls "Phos"; "Ad hebetudinem oculorum efficax" cadmiae, drachmae 8; salis ammoniaci, drachmae 4; croci, drachmae 2; piperis, drachmae 3; foili, auripigmenti, singulorum, drachmae 1 et s. "Valde bonum."

[2] The other poet is Serenus Sammonicus in a chapter of his florid work entitled "De Oculorum dolore mitigando."

Health, New York City; Physician to the New York Skin and Cancer Hospital, &c. Vol. I. London and Philadelphia: J. B. Lippincott Company. Pp. 64 and 24 plates. Price 25s. net.—This is the first volume of an atlas of plates of diseases of the skin, some of the parts of which we noticed when they were issued separately in a former edition. The plates are coloured reproductions of photographs and very successfully represent the conditions which they are intended to portray. The present edition contains many new plates and is suitable for those who, without any very great knowledge of dermatology, wish to diagnose a case of disease of the skin. Equally valuable will be found the directions for treatment. The diseases of the skin are dealt with in alphabetical order and the present volume begins with Acne and goes on to Eczema.

Physical Culture Exercises. By F. W. STEVENS.—We have received from Messrs. Charles Jones and Co., printers and stationers, London, the above-mentioned little book of which they are presumably the publishers. Mr. Stevens, if we may judge by his preface, is a teacher of physical movements who seems to have studied his subject from a commonsense point of view. The general hints with which his book commences are quite sensible and he gives a warning against hurrying the physical education of the body which is quite worth notice. Ten exercises illustrated by reproductions of photographs are given in the book, together with instructions how to perform them, and we think that if carried out by an intelligent pupil they would be of value in bringing about a healthy state of physical culture.

Bath as a Health Resort. Published by the Corporation of Bath. Pp. 46. Price 1s.—We have received a little handbook bearing the above title which has been issued by the corporation of Bath with the avowed intention of appealing to the public in order that British seekers after health may try Bath instead of going to foreign spas. We need not here repeat what we have already said about Bath as a health resort from the point of view of the medical qualities of the waters.[1] We may, however, mention that we referred to the fact that the private slaughter-houses should be done away with and that the sanitation of the Mineral Water Hospital was far from perfect. With regard to the former point we are informed that the public abattoir has not been provided but that there are still 28 private slaughter-houses. This is not as it should be, but while London still possesses private slaughter-houses it is not for the capital to cavil at a provincial city. With regard to the sanitation of the Mineral Water Hospital, we are glad to know that our "thoroughly justifiable report," to quote the medical officer of health, had its effect, and that, according to his report for 1901, "it would now be difficult to suggest any improvement in the general sanitary arrangements." For beauty of situation and of architectural design there are few cities with which Bath need fear comparison. The handbook is carefully written and well illustrated, some of the pictures being in colours. We hope that it will meet with the success which it deserves.

JOURNALS AND MAGAZINES.

The Practitioner.—The October issue of this journal is devoted to the subject of the diseases of infancy and constitutes a valuable addition to already existent practical directions upon this important matter. The side of the question most affecting the practitioner is broached in a thorough manner, beginning with an article upon the hygiene of the mother before the birth of her child. Then follows a contribution from Dr. M. Handfield-Jones dealing with some points relating to the mother's milk in the early weeks of infant life. Dr. George F. Still writes on the use and abuse of patent foods, Dr. W. S. Colman on infantile scurvy, and a "pharmacopœia for infants," by Dr. O. F. F. Grünbaum, is among the other articles in a very useful production.

The Edinburgh Medical Journal.—The October number of this magazine contains a special article dealing with medical education in the United Kingdom, giving the regulations and requirements of the various examining bodies. The original articles include one by Mr. D. M. Greig on the Surgical Treatment of Empyema in which we may note that the author has no hesitation in washing out the pleural cavity if this seems the most effectual means of ridding it of its purulent contents, and one by Mr. J. Rutherford Morison on Gall-stones. Dr. W. Robertson deals with an outbreak of plague which occurred at Leith and the origin of which was not traced; he notes that the intravenous injection of Yersin's serum was followed by rapid disappearance of the buboes in patients who were already convalescent. As a prophylactic this substance is not infallible, as was shown in the case of a member of the sanitary authority who contracted plague after such inoculation.

The Scottish Medical and Surgical Journal.—This journal devotes some space in its October number to a consideration of educational facilities in Scotland. Professor William Stephenson writes of some further obstetric views which need reviewing, dealing in the present paper with some of the early phenomena of labour. Dr. J. W. Ballantyne narrates a case of Malta Fever occurring during Pregnancy and notes that even a high degree of fever does not necessarily produce abortion. A clinical lecture on Percussion of the Apices of the Lungs, by Dr. J. Mackie Whyte, and some remarks on the "Narcosis" Phase of Chloroform Anæsthesia, by Dr. D. C. A. McAllum, complete the original articles in this number.

The Birmingham Medical Review.—Some selections from Professor R. Saundby's lectures on Medical Ethics delivered in the University of Birmingham form interesting reading in a recent number of this journal, dealing as they do with the subjects of professional secrecy and consultations; they will be continued in subsequent numbers. Dr. Leonard L. B. Williams writes of "Rheumatics" in Relation to Climate, meaning by the term the various forms of arthritis apart from acute rheumatism which are popularly embraced under this term, and concluding that "the climatic factors which are found in association with rheumatics are those which interfere primarily with the cutaneous functions." He attacks the use of woollen materials for underwear and notes incidentally that most people have a tendency to wear too much clothing

New Inventions.

AN ANÆSTHETIST'S TABLE.

THE table here described, which has been most admirably executed by Messrs. Arnold and Sons of London, is a copy in metal and glass with some improvements by myself of a table in wood, at present in use in the Cardiff Infirmary, designed by our ophthalmic surgeon, Mr. F. P. Cresswell, when house surgeon. The frame is made of enamelled iron and the shelves below of plate glass. The top has a small metal shelf above at the back with holes for one pound bottles of chloroform, ether, and A.C.E., a Junker bottle, and a drop bottle. On the top are placed masks, face-pieces syringes, &c. There are a rim three parts round the top and a double rail in front to prevent small bottles, &c., from being knocked or shaken off. Around the top there are hooks for Clover bags, gas bags, &c. Immediately beneath the top is a metal drawer with partitions for gags, tongue forceps,

[1] THE LANCET, Oct. 14th, 1899, p. 1061.

hypodermic syringes, strychnine, brandy, &c. The glass shelf half-way down the frame, of the same size as the top, is for the kidney dish, towels, &c. The glass shelf near the

feet, also fitting the frame, is for cylinders of gas and oxygen. The frame is mounted on smoothly working castors and is rigid, light, and stable.

F. W. S. DAVIES, M.R.C.S. Eng., L.R.C.P. Lond.,
Senior Anæsthetist, Cardiff Infirmary.

ETHYL CHLORIDE IN METAL CYLINDERS.

Messrs. B. Kühn and Co., 16, Rood-lane, London, E.C., have submitted to our notice some samples of the tubes of ethyl chloride which they supply. In place of the glass tubes in which the very volatile liquid is usually contained they employ metal cylinders which are much less liable to breakage. Instead of the glass orifice there is a metal "acorn" which is not so readily blocked, and if blocked it can be easily removed for cleaning, or, if necessary, a fresh acorn can be adjusted. Patent automatic headpieces are also supplied, which are more convenient in use than screws. Another advantage of the metal cylinders is that they can be refilled at home. Reservoirs of from 1 to 3 kilogrammes each can be obtained and it is very simple to refill the small cylinders from a reservoir. Thus the price is materially reduced. The metal cylinders are certainly more convenient than those of glass. We consider that the automatic stoppers should be made of rather stouter metal as we found that the one supplied to us was very easily bent.

THE CACHE HOLDFAST ENEMA.

THIS enema apparatus, which is specially designed for the use of travellers, is packed in a bag exactly resembling the ordinary sponge bag in every-day use and is therefore less likely to attract attention than if carried in a box or otherwise. A bowl about five and a half inches in diameter for holding the fluid to be injected is also contained in the bag, the indiarubber tube being coiled within it. The end of the indiarubber tube which carries the valve and dips into the fluid in the bowl is provided with a circular indiarubber sucker similar to the device used for hanging small articles to the inner side of a shop window. As this sucker adheres firmly to the bottom of the bowl the latter is not liable to be overturned and there is no fear of the tube slipping out of the fluid and admitting air to the interior of the apparatus. The bowl is made of white enamelled sheet metal. There is nothing in its appearance to arouse curiosity and the sucker can either be fixed to it or detached in an instant. The makers are Messrs. W. H. Bailey and Son, 38, Oxford-street, London, W.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Oct. 20th, 1827.

THERE is no portion of the law of England which reflect deeper disgrace on her legislature, than the parliamentary enactments relating to the government of MAD-HOUSES, and we heartily congratulate the profession and the public on the probability of their speedy repeal. Had those laws been intended to render insanity incurable—to extinguish the liberty of the subject—to furnish instruments wherewith a villain might satiate his revengeful appetite in security—to prevent inquiry into cerebral pathology—to dissipate every rational principle in the treatment—to encourage the cupidity of unprincipled relatives—to place at the disposal of the magistracy a most dangerous and unconstitutional power—to place an equally obnoxious power in the hands of a single medical practitioner—to add incalculably to the horrors of the afflicted—to augment a thousand-fold the exciting causes of the disease—and to render this deplorable malady a valuable article of trade to unprofessional, unprincipled, and heartless speculators: they could not have been framed in any manner better calculated to produce such results. In no one respect are those laws founded on sound principles—they are radically, systematically defective. It really would seem that they had been adopted by a portion of that description of persons, for whose benefit they were intended. When the blind lead the blind, we know the result.

The evidence contained in the "Report," published by the select committee appointed by Parliament to inquire into the state of the pauper lunatics in the county of Middlesex, has produced an intense feeling of painful interest. Few were prepared to believe that such atrocious practices existed as are spoken of in that document, although we believe more remains behind the curtain than has been exhibited. Enough, however, has been disclosed to satisfy the public that the establishment of a COUNTY HOSPITAL, for the exclusive reception of INSANE PAUPERS, is imperiously required in the vicinity of the metropolis. The advantages resulting from such an institution, if properly regulated, would be indescribable; and we hope that the magistrates, at their annual meeting, on the 1st of the ensuing month, will show that they are not deaf to the voice of the public and of science, or insensible to the piteous cries of their insane poor.

If such an institution were founded, and thrown open GRATUITOUSLY, to all medical students (a regulation that ought unquestionably to be adopted,) the entire kingdom would, by that means, participate in its benefits, arising from the increased knowledge of her medical practitioners, in by far the most important, though the most uncultivated, of human diseases. It is deplorable to observe, in the report of the committee, the treatment to which the unhappy sufferers are subjected—distracted in mind and tortured in body—chained down naked to beastly cribs, from Saturdays till Mondays, without being once removed, with no other sounds to greet the ear, than the incoherent and horrible yellings of their maniacal companions,—with no other view to meet the eye than the bare walls of a madman's den. Who can contemplate such a scene without feelings of horror! Is it to be expected that *cures* can be effected in such a frightful hole—*cures*, indeed! who are the attendants?—unprofessional idiots, if we have read the evidence correctly—porters, uneducated servants, any one who happens to be in the way. In a word, the patients are not classed, but placed together like a herd of swine. Taken altogether, it is a most infamous system, and casts a deep stain on the humane character of the influential people of this country. The public, however, are much indebted to Lord ROBERT SEYMOUR, Mr. ROBERT BROWN, and Mr. GARRETT DILLON, for having, by their indefatigable exertions, succeeded in procuring the appointment of the parliamentary committee, which we can already perceive will be followed by very importan results.

We shall return to the subject, and give some extracts from the REPORT.

THE LANCET.

LONDON: SATURDAY, OCTOBER 21, 1905.

The Problem of the Treatment of Dental Disease.

THE address of Professor OSLER to the students of the Royal Dental Hospital (see p. 1210) is well worthy of attention. In the land upon which he has so recently turned his face the individual citizen pays more attention to the teeth than in this country, not only in personal cleanliness but also by periodically consulting the dentist. With us, on the contrary, the teeth are in the case of the vast majority of people neglected, with the result that on every hand the ravages of dental disease are only too apparent. The question, as Professor OSLER remarks, is a national one and he makes the remarkable statement that if he were asked to say whether more physical deterioration was produced by alcohol or by defective teeth he should unhesitatingly say "defective teeth." Fortunately, there are signs that public authorities and others are beginning to grapple with this problem of dental disease but it is doubtful whether the remedies which they are prescribing are the best when all sides of the question are considered.

If we wish to deal with dental disease we must first of all possess a correct knowledge of its cause. Do we possess that knowledge? It is now more than 15 years since Dr. W. MILLER's excellent work on the Micro-organisms of the Mouth appeared, in which he clearly demonstrated that caries of the teeth was due to the abstraction of the lime salts by acid followed by the peptonising action of bacteria, the acids being formed from the fermentation of carbohydrate food. There seemed to be a general belief, at any rate amongst those practising dentistry, that the cause of caries had been found and the fact seemed to be lost sight of that all that Dr. MILLER had done was to demonstrate the phenomena of caries, and although his researches had shown the channels in which further investigation should be pursued the actual cause of caries was still unknown, and is to the present day unknown. Within the last few years the writings of Dr. J. SIM WALLACE and others have shed some light upon the problem and indicate that in the character of the food-stuffs and their methods of preparation is to be found at least one of the causes of caries. It is not our intention to enter into a discussion of the numerous side issues of this question; suffice it to say that the softer character of the food and the elimination of the fibrous elements would appear to act by preventing proper mastication and self cleansing of the teeth and that the introduction of more rapidly fermentable carbohydrate food encourages the production of lactic acid. But although in the altered character of the food-stuffs there certainly seems to be a possible cause, we are also irresistibly led to the conclusion that the teeth of the present generation do not possess the resistance of those of our forefathers. Unfortunately, an idea has gained ground even amongst a section of the dental profession that teeth do not vary in their structure and that the quality of the teeth has nothing whatever to do with the problem. This idea has been based on what would appear to be wrong conclusions drawn from the investigation into the structure of teeth by Dr. BLACK in America and by Mr. J. LEON WILLIAMS in this country. Dr. BLACK analysed the dentine of a series of teeth and found that there was practically no difference between teeth clinically known as "hard" and "soft." Such investigations, although interesting, prove very little; the analyses were quantitative and not qualitative—a point of the very greatest importance. Still further, there is reason to think that it is in the enamel that the main resistance to attack really lies, and this tissue has not been submitted to a thorough investigation. Mr. WILLIAMS in his researches found that microscopically the defects seen in human teeth are also met with in lower animals, but such facts do not warrant us in concluding that teeth do not vary in their resistance to attack. Clinical evidence unmistakably points to a variation in the structure of teeth and there are reasons to believe that in the defective feeding during early years lie the main causes; indeed, Mr. J. KINGSTON BARTON, who has given considerable attention to the subject, finds as the result of over 20 years of observation that breast-fed children have the best teeth; those fed on cows', asses', or goats' milk the next best; and those fed on milk substitutes the worst of all. In the early feeding and the character of the food-stuffs would appear to lie the real causes but until these are discovered we cannot hope to grapple effectively with dental disease.

Our present knowledge does, however, teach us one important thing, and that is that by scrupulous cleanliness an enormous amount of caries may be prevented and by early attention many teeth may be easily saved. The problem, however, must be viewed from another important point of view and it is this—the amount of dental disease is so great that it is absolutely impossible to deal with it in the way that we should desire. With the children attending the national schools, our soldiers, and our sailors the question becomes one of expense and there seems but little hope for some time that any but a small amount of State money will be available for dental services. And how best can this money be spent? By appointing a few dental surgeons who would save a certain number of teeth or by spreading a knowledge of dental pathology and teaching mothers and children how to take care of the teeth and so to prevent decay arising. Those connected with our dental hospitals seem to have realised the true position of affairs and now see how utterly hopeless it is to grapple with the immense amount of dental disease and that the best course lies in teaching prevention to the rising generation. During the last year the Royal Dental Hospital has issued a small book, written in homely language, on the care of the teeth and this is freely distributed to all the patients. This excellent little pamphlet, coming as it does with the authority of the Royal Dental Hospital, is well worth the attention of medical men and, indeed, of all to whom the care of the young is committed.

Some Points in the Etiology and Treatment of Intussusception.

IN the issue of THE LANCET of Sept. 16th we published two cases of intussusception in which the engagement of the ileum in the colon was apparently due to well-defined although uncommon causes. Intussusception of the bowel is one of the causes of intestinal obstruction of which much has been known for many centuries, yet even at the present day there is rather a tendency in some quarters to regard it as a mysterious illness. There can be no doubt that it is a very fatal one whatever method of treatment may be carried out by the medical attendant but this may be partly the result of that timidity in action which in abdominal surgery has sacrificed (and is still causing us to lose) so many valuable lives. It has been calculated[1] that 35 per cent. of the cases of acute obstruction of the bowels are cases of intussusception and that of these 65 per cent. occur under one year of age, 10 per cent. between one and two years of age, 15 per cent. between two and ten years of age, whilst only 10 per cent. are met with after that age. As the majority of cases therefore occur at an age when the patient cannot give adequate expression to his feelings and the actual state of things does not reveal itself to the maternal eye, some doubt may be thrown upon the diagnosis of the medical attendant and the treatment suggested may not be carried out until perhaps it is too late. The age at which intussusception is met with makes it certain that there is a strong predisposition to it from the anatomical peculiarity attending the growth of the parts, there being, as D'ARCY POWER[2] shows, a rapidly increasing disproportion between the transverse diameters of the large and small intestines during early life. When to this is added an irregular localised contraction of the small bowel from some unknown cause which temporarily affects it, a so-called spontaneous intussusception forms. Why this occurs we do not quite know; probably it is at first simply a spasm of the muscular wall in a child subject to twitching in voluntary muscles. In one of the cases to which we have referred above a round worm was found coiled round the intussusceptum, a condition which it might have started by its movements. The patient was a girl, aged three years, under the care of Mr. W. H. BROWN. Symptoms of intussusception had commenced four days before admission and it could not be reduced by manipulation after abdominal section. Enterectomy was performed and the affected bowel was removed, a Paul's tube being used to each end of the cut bowel and an artificial anus established. 12 days later another operation was carried out and the continuity of the bowel was restored by end-to-end anastomosis. The portion of intestine excised measured 12 inches in length. There was a spiral contraction running round the intussusceptum from base to apex in which a worm 14 inches long was lying.

We have recorded in our columns cases illustrating the effect of mechanical causes in the production of this condition, direct injury to the part, sudden and violent muscular effort, and jolting. The eating of large quantities of cherries and the swallowing of the stones at the same time has been responsible for more than one example. The occurrence of intussusception during such illnesses as purpura and typhoid fever must be regarded as accidental. Later in life some definite pathological cause is most frequently found and of this fact the second of the cases above mentioned is an illustration. The patient was an adult under the care of Mr. GERALD S. HUGHES and the symptoms had been present for two days. In this case also abdominal section was required and although resection of the affected part was found to be necessary it was possible to form an end-to-end anastomosis at once. The patient was thus saved the inconvenience of an artificial anus and the dangers of an operation for its closure. The importance of early operation is here clearly shown if it is indeed necessary, and we fear it is even at the present day, to dwell on this point. The cause of the invagination was a simple polypus growing from the wall of the gut. It is probable that polypi of this nature have been responsible for more intussusceptions of the small bowel than any other form of growth and cases have been recorded by DAGRON, LOCKWOOD, WHITE, and others. A pedunculated trilobed lipoma was the cause in a case described by E. C. STABB. The patient was a man, aged 33 years, who was suddenly seized with abdominal pain on the day of admission to hospital. The origin of this tumour was not certain but VIRCHOW has described submucous lipomata especially occurring in the stomach and upper part of the small intestine. C. F. BEADLES contributed to the Pathological Society notes of a glandular tumour at the ileo-cæcal valve which had produced intussusception, whilst KAMMERER has given an account of another in which a sarcoma of the bowel was apparently responsible. Malignant growths are chiefly found in cases where the large bowel is affected and there are many examples of these described in medical literature, some of which have been excised per rectum when the growth has presented there. Amongst the more rare varieties of intussusception must be mentioned those which have commenced in Meckel's diverticulum which has become turned into the lumen of the gut and so has acted as a drag on the wall of the part. Examples of this method of causation have been given by ADAMS, ERDMANN, GORDON, WAINEWRIGHT, and WILLETT. In a case published by GOLDING-BIRD the intussusception occurred through the opening of a patent Meckel's diverticulum.

Intussusception of the appendix vermiformis is always a chronic condition,[3] of which at least 17 examples are on record; of these, 16 occurred in children under nine years of age. The mechanism of this form is interesting; it may be secondary to the presence of a concretion, a mass of secretion, or a swollen lymphoid follicle, which is pushed into the large bowel by the muscular action of the appendix behind it. If this is drawn up sufficiently far to obstruct the ileo-cæcal valve an attack of pain is experienced. A repetition of these attacks produces changes which enable the large bowel to become intussuscepted and an acute attack supervenes. There are thus many causes, and several varieties, of intussusception, but the one thing that stands out most vividly in a study of a large series of cases is the

[1] Battle and Corner: Diseases of the Appendix, &c.
[2] Intussusception, 1898.
[3] Battle and Corner, loc. cit.

necessity for prompt treatment (usually operative) if life is to be saved. With very few exceptions the cause, however unusual, can be fully dealt with when reduction is performed at an early period. Proof of this statement is being given day by day in the practice of our hospitals where the mortality has been greatly reduced in recent years.

The Growth in the Population of Pauper Asylums in Scotland

THE forty-seventh annual report of the General Board of Commissioners in Lunacy for Scotland (1905) contains much interesting information, the more important items of which are dealt with in a review of the report which appeared in our issue of Oct. 7th, p. 1051. The chief feature of the report is undoubtedly the fact that the proportion of pauper insane who are resident in establishments per 100,000 of the population has steadily increased during the past 25 years. This item of information, however regrettable, might not at first sight appear either novel or interesting where statistics of lunacy are concerned, but we think that a perusal of the causes assigned in the report for the increase in question invests the matter with interest. The growth in the numbers resident has been large and progressive and common to all parts of Scotland during the period named, the largest increases occurring during the last two quinquenniads. A survey of Table I., in which the statistics relating to pauper lunatics in establishments during the past 25 years are exhibited in quinquennial periods, shows that the proportion resident per 100,000 of the population has risen in a manner not to be explained by reference to the columns dealing with the annual admissions or to those concerned with the death-rate, or to these columns in combination, but the explanation has to be sought in the figures bearing upon the discharge-rate. The discharge-rate shows a progressive fall for all parts of the country, the lowest figures being reached in the last quinquenniad, whereas during this period the increase of the admissions in proportion to the population is very small and confined to certain parts, most districts showing a fall, and the death-rate as a whole in establishments has slightly increased.

The number of pauper insane in the asylums of Scotland is therefore increasing because of a diminishing discharge-rate. The reasons suggested for the latter by the Commissioners in Lunacy, to which reference is made in our review of their report, are various but have this in common, that they are disquieting. These reasons are briefly as follows: an increasing unwillingness to retain insane persons in private life or to receive them back from asylums; the admission in larger numbers of old and physically disabled persons who are regarded as unfit for discharge; the attitude of asylum administrators in certain circumstances towards discharge; and a lessened activity on the part of parochial authorities in the matter of removal from the asylum of patients who could be properly cared for outside. If correct, and we do not suppose that their validity can be called in question, they point to the conclusion that an excessive and unnecessary use is being made of some of the public asylums in Scotland to prevent which an increasing vigilance is desirable on the part of asylum authorities in the interests of the ratepayers whom they represent. It is not difficult to see that there is real danger lest the additions and embellishments of which we constantly hear in connexion with asylums should be the outcome of a subtle confluence of motives having their source in human weaknesses and working in unconscious conspiracy towards a common end. The individual who has to support a decrepit relative, senile and irritable, finds himself hampered and worried, while private supervision is expensive or makes exacting demands on the members of his household; in these circumstances he calls to mind the asylum. He contributes towards its maintenance, should he not have the benefit of it? Especially as such places are so well supervised and looked upon quite otherwise than in the past. Accordingly, the relative is sent, and once in the institution there is no sufficient reason to remove him. This action is no doubt sometimes partly dictated by a more enlightened view of asylums; nevertheless, in looking round asylum wards the suggestion obtrudes itself that many of the senile cases and quiet dements might have been kept at home, or would be removed to their homes, were the promptings of affection and sense of duty sufficiently strong in the relatives. In these strenuous times such dictates appear often to be satisfied by a contribution towards the expenses incurred by the union or parish in maintaining the patient at the asylum. The asylum superintendent, too, is human and subject to those influences which are best described in the language of psychology as subconscious. It is natural to wish to control large rather than small establishments. Besides, the relatives are not pressing for the removal of this particular patient; the work of the asylum, the "hewing of wood and the drawing of water," has got to be done; working patients must be had or labour hired instead. Or, perhaps, the institution is new or has recently added accommodation much in excess of immediate wants; the desire is natural to see the cost per bed reduced by increase of the number accommodated. Yet another consideration; these people are useful and harmless whilst under control; it is better for the community that they should be restrained from propagating their kind. Then there are the Poor-law authorities; these are satisfied that their patients are well and cheaply cared for. Why not leave well alone? It is true there is the boarding-out system for quiet cases and it appears to be cheaper in some parts. But there is the trouble of finding homes, of visitation and reporting, and the risk of scandals and annoyances in connexion with boarded-out patients, with the attendant expense of removal to the asylum. Moreover, the asylum committee is not pressing for removal of patients.

Whilst it is clearly the duty of the governing bodies of asylums to scrutinise calls for enlargement of accommodation in order that a real need may be distinguished from one which is spurious and artificial the question of how best to provide for the real need when demonstrated is a difficult one; and it is not unnatural for an asylum committee in such circumstances to decide in favour of an increase of accommodation considerably in excess of immediate needs in the hope that the extension may be sufficient for an indefinite time. This plan is fraught with the objection, as pointed out in the report to which we here refer, that it carries with it a danger of perpetuating the evil—namely,

the detention of the quiet harmless class of patient, which it should be the object to guard against. The common plan of filling spare accommodation with boarders from other asylums whilst profitable to local ratepayers has features to which there are also decided objections. A practical solution of the difficulty consists in the erection of separate buildings as required, accommodating a small number of patients of any class. Extension of accommodation by the erection of such small independent buildings appears, contrary to what might be assumed from an administrative standpoint, to be justified on grounds of economy. The Scottish lunacy report deals at some length with the boarding-out system and its results. Notwithstanding that Scotland sets an example to the rest of the kingdom in respect to this excellent plan for relieving the congestion of asylums, it is clear that boarding out is not employed in some districts to the extent that it might be. But, at any rate, 18·4 per cent. of the total number of pauper insane in the northern kingdom are so provided for as against 5·09 per cent. in England and Wales; the latter figures show that here the boarding-out plan is not taken seriously and does not, in fact, for practical purposes exist. But the experience of Scotland and of certain foreign countries is sufficient to justify its proper organisation and fair trial. Could such a system be developed, and could workhouse authorities as a whole be induced to provide adequate accommodation for cases of senile dementia and of imbecility, we should hear less of the growth of asylum populations and of the necessity for increasing asylum accommodation.

Annotations.

"Ne quid nimis."

POST-GRADUATE TEACHING.

AT the opening of the present session of the Post-Graduate College of the West London Hospital the President of the Royal College of Surgeons of England gave an address upon the subject of post-graduate teaching. Some might say, Why post-graduate teaching at all? Had the early teaching of the medical student been so imperfect that it was necessary to supplement it? In his opinion the answer to those questions might be both affirmative and negative. The education of the medical student had been increasing in complexity and nowadays the curriculum of the student was so full that it was impossible for him to receive the adequate training either of his physical powers or of his mental and moral faculties which would equip him for the full and sufficient discharge of his duties as a medical man. This, in his opinion, was the justification for a post-graduate course. All medical students, he thought, should be trained in the preliminary sciences but the teaching of these should be entirely removed from the medical curriculum and he trusted that this reform was not far off. As for post-graduate teaching, he suggested that many subjects which are now crowded into the primary course should be transferred to a post-graduate course. He also considered that a post-graduate course should be made compulsory after a certain period in a man's career. Such a course would not only increase his knowledge but would also correct his opinions. We need not remind our readers that a system of "study leave" for medical officers of the navy and army is already in full operation. An obvious and urgent want is hereby supplied, for there are many pathological conditions which these officers, from the nature of their service, have few opportunities of seeing and no amount of mere reading can impart the faculty of diagnosing an unfamiliar disease with anything like the same readiness as the sight of cases in a hospital ward. Improvements are constantly being made in the varied details of operative surgery, and new medical applications of chemistry, microscopy, and electricity are frequently devised; some of them may not justify their first promise but there are others which men already engaged in practice might like to understand. Moreover, the renewal of daily contact, if only for a few weeks, with the holders of leading positions as clinical teachers is in itself not without advantage to those whose work keeps them far from centres of medical learning and whose recollection of their student days is fading. For the promotion of these objects the post-graduate courses of the West London Hospital, where there are no students, offer excellent facilities. On the question of the necessity for a general extension of post-graduate instruction we are cordially in agreement with Mr. Tweedy's ideas, but there are many difficulties in the way of carrying them out. Of all members of the profession the class that needs a post-graduate course most is the general practitioner in the out-of-the-way districts of the country. For him, however, there is no such thing as "study leave." He cannot leave his practice to look after itself and if he employs a locum-tenent that locum-tenent has to be paid, with the result that the principal is out of pocket. Not only has he to pay his fees for the post-graduate course but he has to pay someone else for doing his work. It may be that if the State ever recognises of what value the medical profession is to the community there will be Government grants available for medical men to bring their knowledge up to date. The medical profession is the only one in the world which devotes its whole time to reducing its sources of income and the more successful that its work is the smaller the field of work becomes. For this reason alone it has a claim upon the taxpayers which should be considered. But we hardly expect to see such open-handed and enlightened consideration as would be implied by State grants in aid of post-graduate medical work, though our grandchildren may experience some such public awakening to the situation.

THE SUN AS A SOURCE OF OZONE.

IT is a very generally cherished idea that ozone is accountable for the health-giving properties of sea or mountain air. It is, at any rate, conceivable that air in which ozone is present is likely to have a favourable influence on nutrition and therefore a benign effect upon the general health, because the oxidation processes would receive a healthy stimulus. On the other hand, it is possible that ozone may have little or no influence one way or the other, but that its presence simply means fresh air free from organic impurities. It is even doubted by some whether ozone ever exists in air in appreciable quantity, the alternative view being held that when air is particularly fresh and vitalising peroxide of hydrogen is present. Certainly, if the supply of atmospheric ozone depended upon thunderstorms the quantity must necessarily be small. There are, however, other and probably more active means in nature by which ozone may be produced. In certain processes of oxidation we know that ozone is sometimes produced, as when phosphorus is allowed to oxidise slowly in moist air. Again, when moist substances, as, for example, sheets of linen, are hung in a keen dry breeze a considerable amount of ozone is formed. A greater agency, however, concerned in the production of ozone is probably light, and more particularly the ultra-violet rays, or chemically active light, of the sun. Indeed, it is not unlikely that

ozone is not produced directly by the electric discharge but by its ultra-violet rays. Recent experiments have at any rate shown that ultra-violet light is capable of ozonising oxygen. When the light of a spark gap is allowed to act upon oxygen through a quartz plate (quartz being transparent to ultra-violet rays) ozone is formed. When, however, a mica plate is substituted for the quartz plate, mica being opaque to ultra-violet rays, no ozonisation occurs. The formation of ozone by a silent electric discharge would therefore appear to be due not to electric energy but directly to the ultra-violet rays emanating from the discharge. According to this view the sun, rich as are its rays in ultra-violet, should be a powerful source of ozone and thus another explanation of the undoubted purifying effect of sunlight would be afforded. Such a purifying process, however, can have little direct effect upon the air at ordinary breathing level, since the ultra-violet rays are strongly absorbed by the earth's atmosphere. At high altitudes, on the other hand, the chemical activity of sunlight is very marked and in these regions doubtless relatively large quantities of ozone are formed. As the ozone is diffused into lower regions it is probably for the most part reduced by oxidisable substances. According to this there must be a great process of purification of the upper stratum of the atmosphere going on, its effects spreading through the air downwards. These observations serve to emphasise again the great importance of keeping the air as transparent as possible and from being sullied by smoke so that the sun may not be hindered in carrying out its great beneficent work of purification. To put it in scientific terms, the passage of ultra-violet rays should be encouraged as much as possible. It is interesting to remember that an illustration of the chemical activity of the sun's rays is seen in their effect at high altitudes upon glass containing manganese which after some exposure assumes an amethyst tint. The same phenomenon may be witnessed even in some of the shop windows, and especially those facing the south, in our streets, so that in spite of the contaminating influences of a crowded city and of its situation at a low level the purifying action of the sun is not entirely shut out. The ultra-violet light of the electric spark in quite a short time produces a similar colouration.

MEDICAL MEN AND MUNICIPALITIES.

THE visit of nearly two-thirds of the members of the Municipal Council of Paris to London as the guests of the London County Council is one of great interest and importance. We are glad to think that so far our visitors have been favoured with exceptionally fine weather, a matter which is quite outside our power, whatever our good will, to regulate, and that they have been received by His Majesty the King, a courtesy for which all his faithful subjects will thank him. As medical journalists we welcome the fact that their President is a medical man—namely, Dr. Paul Brousse. The work of the municipalities of great or even of small cities is so bound up with sanitary matters that it is only fitting that their chiefs sometimes should be medical men, or at all events men who can rightly appreciate the value of sanitary efforts for the well-being of a city. Not very long ago the chairman of the London County Council was a medical man—Sir W. J. Collins—and before long we hope to see a medical man holding the exalted position of Lord Mayor of London. But to return to our guest, Dr. Brousse. No one who was then present can forget the eloquence and grace with which, in his capacity of President of the Paris Municipal Council, he welcomed the British physicians and surgeons to Paris in May of the present year. For our part we can now only express a wish that both he and his colleagues will receive as warm a welcome from the citizens of London as did the members of our profession from the medical men of Paris. The Paris municipal councillors will find some matters over here in which we are ahead of our neighbours from a sanitary point of view. But there are also many in which we are very far behind. There is, for instance, our river steamboat service. There is also the lack of a public abattoir. If our visitors are inclined to feel jealous of our drainage and our water-supply they can easily regain their peace of mind if they ask to be taken to the slaughter-houses which we believe still exist in Aldgate. But nothing but good can come from the interchange of ideas which such visits as the present bring about and the *entente municipale* is a worthy pendant to the political friendship which has so auspiciously sprung up.

THE PHYSIOLOGY OF MAMMALIAN REPRODUCTION.

THE changes which are produced in the œstrous cycle in carnivorous animals as the result of domestication and the relationship of œstrum or "heat" to menstruation in the human female are problems of great importance which have not yet received a satisfactory solution. In a paper read before the Royal Society Mr. Marshall and Mr. Jolly have recorded a series of important observations on this complex subject. In the domesticated dog they find that the bitch is monœstrous and has typically two sexual seasons in the year. The wild species of the genus in their natural state have only one sexual season annually but in captivity they may experience two seasons, like the bitch. The domestic cat has three or four sexual seasons in the year and is polyœstrous, so that in a single sexual season there may be three or four "heat" periods. The wild cat, on the other hand, has only one sexual season in the year. That the periodicity of the œstrus is dependent to some extent upon environment is illustrated in the case of the fox. Domestication and captivity undoubtedly seem to favour increased frequency in the recurrence of the œstrous cycle. In their description of the histological changes found in the uterus during this cycle Mr. Marshall and Mr. Jolly recognise the anœstrum, or a period of rest, the pro-œstrum, including both congestion and growth of the mucous membrane of the uterus and its degeneration, and, lastly, a period of recuperation, the œstrus or metœstrum. The second period, the pro-œstrum, is characterised by congestion of the mucous membrane and increase in the number of capillaries. This is followed in the next period by extravasation of blood and the emigration of numerous polymorphonuclear leucocytes. Shortly after this external bleeding is observed. There is a considerable denudation of the uterine epithelium but not more than one layer of the stroma cells is involved. In the recuperative period the epithelium is restored and new capillary vessels are formed. From their observations Mr. Marshall and Mr. Jolly conclude that the changes in the bitch are identical with those seen in the sheep, the ferret, the monkey, and the human female. Ovulation in the bitch takes place after external bleeding has been going on for several days. It occurs, therefore, during the period of œstrus but is quite independent of coition or of the presence of spermatozoa in the uterus. This observation—namely, that ovulation does not take place until after the pro-œstrum (or at any rate until after the commencement of the external bleeding stage of the pro-œstrum) is directly opposed to the view that "heat" and menstruation are due to ovulation or to the presence of the corpus luteum. It is also opposed to the view that the occurrence of menstruation is due to no fertilised ovum being present in the uterus, in preparation for which the preceding growth had taken place. The further view that the destructive stage of the pro-œstrum is of the nature of an abortion affecting an ovum released at a preceding period is untenable owing to the comparative infrequency of the "heat" periods

and therefore, if these observations are correct, of the ovulation periods in the bitch. On the other hand, the hypothesis that the entire pro-œstrous period denotes a preparation for the lodgment of a fertilised ovum is in accordance with the facts observed. The influence which the ovaries exert on the general metabolism of the body is well known and attempts have been made to utilise this knowledge in the treatment of various disorders associated with the female generative organs. The results have been often most disappointing but as our knowledge of the real physiology of the ovary is of the scantiest it is not to be wondered at that no very certain results have been obtained by such purely empirical treatment. That ovaries can be transplanted successfully, can acquire new vascular attachments, and exert some effect upon the general tissue metabolism is proved by the observations of Jayle, Knauer, and others. The experiments of Mr. Marshall and Mr. Jolly have demonstrated that "heat," or a transient condition resembling it, can be produced by the injection of extracts made from ovaries in a pro œstrous or œstrous condition, and that when such organs are successfully grafted into an animal previously deprived of its ovaries the condition produced is identical with normal "heat" and is irrespective of the position of the graft. As a further result of their investigations they have come to the conclusion that Fraenkel's theory as to the functions of the corpus luteum is only partially correct. According to this view the corpus luteum is the only ovarian organ of internal secretion and exerts an influence on the generative functions generally throughout the whole reproductive period of the life of the animal. Amongst its other reputed functions it produces "heat" and menstruation and controls the attachment of the ovum and the formation of the placenta. If, however, the observation that ovulation in the bitch only takes place towards the end of the pro-œstrum is true, then the corpus luteum can have no part in the production of any process preceding ovulation. From experiments carried out on bitches and rats Mr. Marshall and Mr. Jolly are led to the conclusion that the presence of luteal tissue is necessary during the first part of pregnancy but that the corpus luteum ceases to be functional during the later stages. By removing the ovaries in various stages of pregnancy they found that abortion occurred, except in those cases in which the removal was carried out in the later stages of pregnancy. The general conclusions drawn are that the ovary provides an internal secretion which is elaborated by the follicular epithelium or by the cells of the stroma. This secretion circulating in the blood produces menstruation and "heat." After ovulation, which takes place during œstrus, the corpus luteum is formed and this organ produces a further secretion the function of which is essential for the changes taking place during the attachment and development of the embryo in the early stages of pregnancy.

BREAKING UP THE STREETS.

IN another column we publish a letter from the secretary of the London Hydraulic Power Company referring to our remarks in THE LANCET of Oct. 7th concerning the relaying of a main by the company. We are glad to find that the company was not to blame. But the case offers one more instance of the hopeless want of system which prevails as to breaking up the streets. The owner of the yard which is now being built over should, we consider, have given the company longer notice than he did of the necessity for relaying the main, for he must surely have been aware that the street was to be relaid. The whole question of breaking up the streets is becoming very important and failing legal intervention we can only offer the following suggestion. In primitive and mediæval times the recognised way of insuring the stability of a building was to bury a human being in the foundations or to immure him in the walls. It has been suggested that the story of the rebuilding of Jericho by Hiel (I. Kings xvi. 34) refers to a custom of this kind: "He laid the foundation thereof in Abiram his firstborn, and set up the gates thereof in his youngest son Segub." To come down to more historic times we find in the Irish life of St. Columba the following: On arrival at Hy (Iona) "Columbkille said then to his people, It would be well for us that our roots should pass into the earth here. And he said to them, It is permitted that one of you should go under the earth of this island to consecrate it. Odhran arose quickly and thus spake: If you accept me, said he, I am ready for that. ..... Odhran then went to heaven. He (Colum) founded the church of Hy then." It should be observed here that the victim was a voluntary one. As faith declined a voluntary victim became difficult to obtain but this difficulty was got over by drugging him so that if not precisely willing he at least did not resist. Now if every time that a roadway were repaved the paving company were to bury a director of a gas, water, "power," electric lighting, or telephone company, or even the Postmaster-General, we are sure that before long some means would be found for keeping the paving undisturbed until it was worn out! We hope that the Royal Commission on traffic will take note of this simple idea.

THE HEARING OF RAILWAY SERVANTS.

Dr. Zilliacus, a Finnish physician, has undertaken an interesting investigation into the hearing of railway servants in his country and has published the results of his studies in the latest number of the reports of the Finnish Medical Society and in the *Svenska Dagbladet*. The matter is one of considerable interest, especially as Dr. Zilliacus's investigation deals, amongst other things, with the degree in which defects of hearing amongst engine-drivers and stokers may be accompanied by serious dangers not only to the employés of the railway but also to the general travelling public. The occurrence of aural diseases, with their accompanying defective power of hearing, amongst railway servants has been the object of many inquiries in different European countries, the results of which, in the majority of cases, have been very similar. With increasing years of service an increasing number of aural diseases, accompanied by defective hearing, has been demonstrated but Dr. Zilliacus considers that the influence exerted by age alone, independently of the years of service, on the powers of hearing has been overlooked by practically all observers. He examined the organs of hearing of the railway *personnel* of a certain line and he examined also those of persons belonging to classes of society similar to that of the railway servants. During the years 1895 and 1896 all the persons employed in the railway industry at Helsingfors were examined. In the year 1902 there were examined, with reference to the organs of hearing, other 410 persons—firemen, engine-drivers, guards, and brakesmen. Finally, for the sake of comparison, in the year 1905 were examined the powers of hearing of 249 persons in the prison of Sörnäs, consisting of labourers, mechanics, and factory workers. The comparison demonstrated a striking agreement between the amount of defective hearing among the railway servants and among persons who had not had anything to do with the railway industry. In fact, the number of those who possessed normal powers of hearing was even less among the latter than among the railway *personnel* who were examined. Dr. Zilliacus therefore speaks very decidedly against the generally accepted idea that service on the lines of railways, especially on the engines, has a hurtful effect on the powers of hearing of the staff. It is another question as to the degree in which defective hearing on the part of the *personnel* of the train may have a bad effect on the safety of the movements of the train. This

question has been answered in Europe in various ways: some, especially aural surgeons, insist on normal hearing in engine-drivers and firemen; others, who have as close a knowledge of the service on the locomotives and of the demands that it makes on the powers of hearing of these functionaries, give as their opinion that even a very defective hearing does not involve any danger to the security of the movements of the train. In Finland this question has been the object of a discussion by a committee appointed by the Government, to which Dr. Zilliacus in his capacity as expert was summoned. He gave it as his opinion that the demand for absolutely normal hearing on the part of the railway *personnel* cannot be met and is also unnecessary. If this demand were to be complied with not less than 62 per cent. of the employés whom he had examined, none of whom had yet reached the age of 51 years, would have to be dismissed. The possible drawbacks due to defective hearing among railway servants ought, he considered, easily to be counteracted by so simple a measure as the use of a code of optical signals. For example, the guard might be obliged at the same moment that he whistles notifying departure to give a signal in daylight with his hand and after nightfall with a lantern. Dr. Zilliacus, while insisting that service on the railway has not the deleterious influence on the powers of hearing that has been attributed to it in many quarters, points out that those defects of hearing which have been observed to exist increase in number and gravity with the increase of years and service and are to be found just as often and in just the same increasing degree among persons whose occupations expose them to deleterious external influences similar to those to which railway servants are exposed during their work. The demand for normal hearing among railway servants, he thinks, is unnecessary, as with the needful amount of care a person of even greatly diminished powers of hearing may be able to perform his duties properly, so long as they do not depend on the right comprehension of acoustic signals.

THE SEWAGE PROBLEM.

THE evidence already given before the Royal Commission on Sewage Disposal is full of information of the most important kind and whatever may be said of the value of Royal Commissions in general it is certain that in this particular instance no other method could have brought together such a valuable record of experience. The circumstance that the composition and character of sewage in various parts of the country differ so widely makes it difficult to generalise and there is besides the question of the adaptability of environment as regards the method of treatment to be considered. We referred in THE LANCET of April 8th last to a book which contained a review of the evidence collected by the Royal Commission at that time and we commented upon its value to all those who desired to be in possession of the experiences given by so many excellent and well-informed witnesses. A yet further valuable contribution on the subject is contained in the special and general evidence given before the commission by Dr. G. Reid, medical officer of health of the Staffordshire county council. Dr. Reid has recently presented a reprint of his evidence to his council. His opinions and impressions claim a hearing, since they have been formed as the outcome of his practical experience as administrative officer of a county authority having control, under the Rivers Pollution Prevention Acts, of streams which drain an area embracing a population of nearly 2,000,000. In his special evidence Dr. Reid records his experience of analytical methods applied to the testing of sewage effluents and his views as to the adoption of a standard of purity and as to the degree of dilution which should take place before storm overflows should come into operation. As regards the practice of the Local Government Board in sanctioning loans for sewage disposal works, Dr. Reid gives some cogent reasons why some authoritative statement is needed regarding the question of the artificial disposal of sewage. He suggests very properly, for example, that a definite and authoritative pronouncement is urgently required on the question as to whether land treatment is or is not essential. The commission has already expressed the opinion that it is not and yet the Local Government Board still hesitates to sanction disposal works without land, or, if it has yielded on the point, it has required the provision of twice the area of bacteria beds that would satisfy it if land was provided. Dr. Reid says that this imposes a very costly and, in his opinion, needless condition upon the authorities. He suggests that it would be better that authorities should be required to give an undertaking to extend the works within a specified period if they should be found to be inadequate. It is also very desirable, Dr. Reid points out, that an authoritative pronouncement should be made as soon as possible regarding the type of plant which will give the best results under different conditions. The present practice of the Local Government Board is to require the same cubic capacity of beds to be provided, no matter whether the method of disposal proposed is by contact beds or by perforating filters. Finally, he points out that as regards the construction of the beds the cubic capacity required by the Local Government Board is the same no matter what sized particles are used. As Dr. Reid very rightly says, considering the fact that the successful working of the beds depends upon the vitality of the organisms, which require for their life-processes certain important essentials, it is again hardly conceivable that the highest state of activity can be arrived at and maintained no matter whether the organisms are housed in filters composed, say, of three-inch particles or one-eighth of an inch particles or any grade between these sizes.

THE MANAGERS OF THE METROPOLITAN ASYLUMS BOARD AND THEIR ASSISTANT MEDICAL OFFICERS.

WE publish in another column the report of the managers of the Metropolitan Asylums Board upon the circumstances in which resignations were tendered by Mr. F. R. Barwell, Mr. G. A. Herklots, and Dr. H. P. Kennard of their posts as assistant medical officers to the Board. Various letters have appeared in THE LANCET to which reference is made in the report and no doubt our readers are fully aware of the situation. As the report stands the medical men who have resigned have not taken much by their move, but it is probable that they expected no more for the instances which they quoted as justifying their resignation were trivial and, to a certain extent, those who conducted the investigation were responsible for the conditions complained of. The situation, however, is a more serious one than appears from the report; otherwise we should not devote space to its consideration. The Metropolitan Asylums Board, as one of the main safeguards in our capital against the spread of infectious diseases, has especial reason to demand a willing and highly qualified medical staff. It should pay such a staff well and should treat it well, for it is the medical man and not the lay manager, or the engineer, or the nurse who is the real mainstay of the public health in critical times. If the assistant medical officers are made subordinate to nurses (it does not matter in the least whether the instances of such subordination are trivial or not), and if they are liable to summary dismissal, the medical service of the Board will not be satisfactorily recruited. Similarly if the medical superintendents have

sound and adequate reason to be dissatisfied with the managers of the Board discontent will arise at the head of the service also, and readers of THE LANCET know that recent actions of the managers have been resented by some of the medical superintendents. The spirit which guides the management of the Metropolitan Asylums Board seems to be directed against the medical profession. There are noteworthy exceptions to this rule among the *personnel* of the Board, just as there are members of the Board whose anti-medical bias would appear to be particularly intrusive. It is much to be regretted that the medical profession is not adequately represented upon the Board. The extent to which a scheme for the isolation of infectious disease must rely for its success upon medical efforts is practically unlimited, but this aspect of the question does not appear to present itself with any distinctness to the minds of the present managers.

THE WORK OF THE LONDON SCHOOL OF TROPICAL MEDICINE.

THE committee of the London School of Tropical Medicine decided this year to open the nineteenth session with an introductory lecture followed by a dinner of past and present students in imitation of many of the older medical colleges. The committee did wisely in securing as lecturer Dr. G. H. Nuttall, who is one of the examiners for the Cambridge diploma in tropical medicine and hygiene, which he and others recently persuaded the Senate of the University to establish. Instead of referring, as his hearers perhaps expected, to his own researches in protozoology, he preferred, as our readers may see in another column, to point out some of the obvious needs of the Tropical School. In mentioning the peremptory need of further research work he reminded his audience that science workers are little valued financially in this country and teachers are constantly distressed by finding that students, gifted with scientific training and special powers of research, have unwillingly to drift away to the practice of medicine in order to gain a living wage. The lecturer's early training in America and Germany caused him not unnaturally to compare scientific work in those more fortunate countries with the difficulties put in the way of research workers here. In the United States it seems hardly necessary for scientific institutions to be State-aided because in all the big cities there are millionaires able and willing to endow schools, colleges, and research laboratories. All German universities and many towns in Germany are provided by the State with institutes of hygiene, while the salaries of teachers are provided for by special grants. Even the poorer Italian universities are equipped with institutes of hygiene for scientific research and teaching purposes. We must allow that the hygiene laboratories of Edinburgh and Manchester in this country compare favourably with some of their foreign rivals but it is sad to be reminded that neither at Oxford nor at Cambridge is there as yet any adequate provision for research work or experimental work in preventive medicine. All help in this country must come from the general public, who have not yet learned that money given to scientific workers sometimes proves a valuable commercial investment. Benevolent people give money to hospitals during their lifetime and by legacies, but little is done for the endowment of teaching chairs and, as we have often pointed out, most teachers of science in this country receive miserably inadequate salaries. If it were not for this Great Britain and her colonies would be able to employ our own countrymen instead of having to borrow scientific men from abroad. The knowledge of tropical disease is growing every year and the students are becoming in consequence more and more weighed down by the amount which they have to learn during a course which only lasts three months, and the time must shortly come when those responsible for the teaching of tropical diseases will have to consider whether the session should not be prolonged. But all this costs money and the Imperial Government, though appreciative of the value of work in preventive medicine, is not yet moved to subsidise it. Dr. Nuttall emphasised the need of more knowledge of comparative pathology, for all the recent discoveries bring into closer touch than ever the diseases of man and of the lower animals. Trypanosomiasis and piroplasmosis, to mention only two of them, require profound studies in many of the mammalia and it almost looks as if our knowledge of the causation of plague were awaiting further studies among rats and their parasites. In Sir Lauder Brunton's address at the Medical Society, which we published last week, we were reminded that "the study of the diseases of disease germs may one day become one of the most profitable fields of research." And certainly in this direction some suggestive facts have recently come to light. For example, relapsing fever, once so common in these islands, has now almost become a disease of warm countries, and we know that bugs have been found to contain the spirillum of this fever and, according to Professor Schaudinn, the spirochæta has been seen by him to develop in them. It may be worth while to remind those interested in medical history that bugs are said to have been introduced into England in the sixteenth century, while there is no trustworthy information as to the occurrence of relapsing fever in the United Kingdom before the beginning of the eighteenth century.

ANKYLOSTOMIASIS IN BELGIUM.

Mr. Leeds, British vice-consul in Liége, in a report just received at the Foreign Office, writes that the sacrifices made by the provincial council to organise a scientific struggle against ankylostomiasis have borne fruit. Commenced in 1903 with encouraging results, the campaign was pursued and developed in 1904 with such vigour that success has at length crowned the efforts of the promoters. To-day it may be said that the epidemic is diminishing and that the time is not far distant when no further danger may be anticipated from this scourge which has already claimed too many victims in the Liége district. There is no doubt that this satisfactory result is in a large measure due to the new conditions of paying the sick workmen during their enforced idleness. At first a simple certificate from a medical man stating that the workman was suffering from ankylostomiasis was sufficient for the man to draw 1 fr. 50 c. per day from the special funds set apart for that purpose, provided that he was absent from work not less than four weeks. There was no question of the workman being thoroughly treated and not returning to work before being absolutely free from the parasites so that there should be no further danger of contagion to his fellow workmen. The funds voted by the provincial council were therefore wasted in so far as the stamping out of the disease was concerned, though serving their purpose as giving temporary relief. The creation in May, 1903, of the mining dispensaries enabled the provincial council to employ its funds more usefully. It was then decided that every miner suffering from ankylostomiasis who underwent a cure in any of the recognised dispensaries should draw 1 fr. 50 c. per day, irrespectively of the time during which he was forced to stop work. This gave the medical men the necessary power to induce every miner suffering from the disease to undergo treatment and, secondly, to prolong the treatment till the cure was complete. The success of the miners' dispensaries has surpassed the most sanguine hopes of the promoters. At the beginning of 1904 40 per cent. of the miners who presented themselves for examination were found to be affected; eight months after the number was 14 per cent. Further, at the beginning

of 1904 the average number of days required for the cure was 29, while at the end of 1904 the number was only 15. Finally, the general average of sufferers has fallen from 28 to 12 per cent. In five of the largest mines, where special precautions have been taken, there are now no cases of this disease.

PERNICIOUS VOMITING OF PREGNANCY.

OF late years the view has been gaining ground that the more severe cases of the pernicious vomiting of pregnancy are associated with a toxæmic condition of the patient, the so-called toxæmia of pregnancy. If we exclude all cases due to causes acting apart from the uterus, such as various affections of the stomach which may happen to be associated with pregnancy, then we may divide the remaining cases into three groups as regards their causation—namely, those of reflex origin, those of neurotic origin, and those due to certain toxic conditions. Among the first class may be placed cases due to such causes as displacements or over-distension of the uterus. That cases of purely neurotic origin occur seems to be proved by the cures obtained by mere suggestion or by a modified rest cure. Though many observers have been led by their clinical and post-mortem experience to think that some, at any rate, of these cases were really examples of toxic poisoning, yet the whole matter up to now has been so largely speculation and the nature of the toxin so uncertain that a great deal of scepticism has been aroused as to the possibility of such an origin. In a paper read before the American Gynæcological Society and published at page 1172 of our present issue Professor J. Whitridge Williams brings forward some important evidence as to the nature of these so called toxic cases. From his experience of six cases, three of which ended fatally, he has come to the conclusion that in a certain proportion of the toxæmic cases characteristic lesions, identical with those seen in cases of acute yellow atrophy and icterus gravis, can be found in the liver. Out of ten cases collected from the literature in five acute yellow atrophy and in the remaining five fatty degeneration of the liver was found at the necropsy. Such a relationship can hardly be due to mere coincidence. As long ago as 1879 that astute clinical observer Matthews Duncan suggested that some of the fatal cases of vomiting were really examples of acute yellow atrophy of the liver but his teaching appears to have been forgotten. The nature of the lesions found post mortem—namely, the necrosis and degeneration of the central portion of the liver lobule and the necrosis of the secretory portions of the kidney—seems only explicable on the assumption that some very powerful toxic substance is circulating in the blood. As to the exact nature of this poison we are in entire ignorance, although all the evidence appears to point to its being connected with tissue metabolism and directly due to the pregnancy. The most important part of Professor Whitridge Williams's observations is, however, the fact he has ascertained that there is a very striking increase in the percentage of nitrogen eliminated as ammonia compared with the total nitrogen of the urine, so that the former may rise to as much even as 16, 32, or 46 per cent. instead of the normal 3 to 5 per cent. Whatever the cause of this may be—possibly it is, as he suggests, to neutralise an excessive production of acids as in diabetes and phosphorus poisoning—the fact is of the utmost prognostic importance. The practical outcome is that a marked increase in the ammonia coefficient in such cases indicates a very grave condition which demands the immediate induction of abortion. If further experience should show that this condition is a constant one then our knowledge of the appropriate treatment to be employed will be much more certain and the distressing instances which occur from time to time in which in spite of the uterus being emptied yet the patient dies should become less frequent. Another very interesting and important clinical fact pointed out is that in cases of pernicious vomiting the total amount of nitrogen remains approximately normal and the ammonia coefficient is greatly elevated, while, on the other hand, in cases of eclampsia the total output of nitrogen is greatly diminished but the ammonia coefficient remains practically normal. It may therefore be said that a high ammonia coefficient is of favourable prognostic value in eclampsia and of very unfavourable import in the pernicious vomiting of pregnancy. The paper is a very valuable contribution to our knowledge of this important subject and marks a considerable step in advance of our power of forming a correct prognosis in these two diseases.

AN EXTRAORDINARY CRIME.

THE *Demerara Daily Chronicle* of Sept. 16th contains the outline of a charge of murder made against a young creole woman of negro blood which is remarkable on account of the nature of the crime alleged against the accused and of the motives which are supposed to have actuated her. It is also a case in which the evidence necessary to show the guilt or innocence of the accused must be of a medical nature and in which the want of power to compel a prisoner to submit to medical examination is made conspicuous. The victim, a young creole woman of coolie extraction, was found in a field at Plantation Melville, Mahaica, on the east coast of the island, with her throat cut and at the mortuary of the estate it was discovered by Mr. Francisco Fernandes, the Government medical officer, that her body had been shockingly mutilated. The woman was married and was known to have been for some time *enceinte*, and the fœtus had been removed, presumably, by the murderer. Before the post-mortem examination had been commenced a woman named Andrews and a coolie driver named Joe Sukul brought to the mortuary what they alleged to be the stillborn body of an infant, the child of a niece of the former and this body was examined and allowed to be buried without suspicion being excited. The niece, Eliza Jones, since arrested, was known to have cohabited for some time with Joe Sukul, but he, although still visiting her occasionally, had transferred his affections to another woman who had borne him a child. It is stated that Eliza Jones had for a long time declared herself to be pregnant but as no result ensued her quondam lover had twitted her with the delay and expressed disbelief as to her condition. It is now suggested that this was feigned in order to excite his sympathy and to establish a claim upon him and that in order to clinch her story the woman Jones murdered the coolie Kissooneah, who was her intimate friend, and having invited her aunt to stay with her for her pretended confinement sent her with the fœtus removed from Kissooneah to the hospital Ten days passed before suspicion grew and both women were arrested but Andrews has since been released and it is possible that she may give evidence against her niece. The difficulty which has arisen, and which is likely to lessen the force of the evidence on either side, is due to the fact that Jones up to the time referred to in the *Demerara Daily Chronicle* absolutely refused to submit to medical examination. British law presumes an accused person to be innocent until he is proved guilty, and as the result of this he cannot be compelled to do anything which may assist in securing his conviction. Those aware of an attitude on the part of a prisoner which an innocent person would not be likely to adopt are likely to draw inferences from it, but the jury cannot be invited to do so at his trial. It is hardly necessary to say more on the subject of the importance of the medical evidence in such an inquiry as that which is

now taking place into the death of the woman Kissooneah, and it would be out of place to discuss the physical conditions which possibly may have occurred in the fœtus, in the dead mother, or in the accused, in view of the fact that the case must be regarded as *sub judice* and that such a discussion would be purely speculative. If, however, the cruel murder which beyond doubt took place is found to have been perpetrated by the person and for the motive alleged it is likely to take a prominent place among remarkable crimes.

THE BRITISH SCIENCE GUILD.

THE inaugural meeting of the British Science Guild will be held at 4.15 P.M. on Oct. 30th at the Mansion House, the Lord Mayor having consented to preside. The organising committee has lost no time in drawing up a scheme of administration and the names of many valued men of science and medicine appear amongst the list of officers. The first president proposed is Mr. R. B. Haldane, M.P., K.C. It may be pointed out that the guild has aims which are not identical with any existing scientific body, as, for example, the Royal Society or the British Association, its purpose being "to stimulate not so much the acquisition of scientific knowledge as the appreciation of its value, and the advantage of employing the methods of scientific inquiry, the study of cause and effect, in affairs of every kind."

ENTERIC FEVER IN THE ARMY.

WHILE the sterilisation of water used for drinking purposes and of doubtful purity is, of course, a precaution which it would be wrong to neglect, it is undoubtedly the fact that water is by no means the one and only source of enteric infection. The Principal Medical Officer of His Majesty's Forces in India, Surgeon-General Sir Thomas J. Gallwey, in an interesting and long letter to the *Times*, graphically shows how this conclusion is forced upon him by his considerable experience in the Services in India. With we do not doubt the very best intentions the advocates of the theory that enteric fever in the army is preventable simply by boiling the water have overstated the case and gone further than actual facts warrant. It is, however, regrettable that men who, as Surgeon-General Sir Thomas Gallwey says, "have been in harness all their lives striving strenuously at all times and in all places to improve the health efficiency of the army" should be accused of neglect or of omitting any precaution that is calculated to combat the onset of disease when such is not the fact.

MANGROVE BARK IN LEPROSY.

FOR many years preparations of mangrove, *Rhizophora mangle*, have enjoyed a great reputation as a cure for leprosy among the people of Cuba and these drugs have recently been made trial of by medical practitioners in the island with, as it would seem, a remarkable degree of success. Dr. Duque and Dr. A. Moreno, indeed, declare, in *La Semaine Médicale* (No. 40, p. 479), that they were able to cure all the cases in which they employed this treatment during the early stage of the disease in less than a year and more than half of the cases which had advanced to the second stage in from two to five years. Only one of the cases in the third stage was completely cured but in the others a marked improvement in the general condition was produced, the diarrhœa, the fever, and the anorexia disappearing, though the trophic changes and the neuritis were unaffected. The preparations employed were a fluid extract and an extract made from the bark of trees of not more than six years' growth, dried carefully in the open air and not by artificial heat. The initial dose of the fluid extract was a teaspoonful night and morning which was gradually increased until ten or 12 teaspoonfuls were taken daily. The extract was made up into pills or dissolved in water, the maximum quantity prescribed being 120 grains; this amount, however, occasionally produced vomiting and diarrhœa. Local applications of cotton wool soaked in a 30 per cent. solution of the fluid extract were also employed and sometimes baths at night containing sufficient decoction of bark to colour the water red. The treatment has also been tried at the Havana leper hospital during more than two years on 17 cases by the physicians in charge at the request of Dr. Duque and Dr. Moreno, and while the results obtained were far from being equal to theirs considerable improvement was reported in every case, one being completely cured with disappearance of Hansen's bacilli. In the others the patches on the skin became much less noticeable, sensation returned in a greater or less degree, and the hair and the eyebrows began to grow again.

BURNING PETROL SPIRIT IN THE CITY.

ON the evening of Oct. 16th a steam-driven motor lorry was passing the Royal Exchange. It belonged to the Anglo-American Oil Company, Limited, and was laden with nearly 1000 two-gallon oil tins. Most of the tins were supposed to be empty but a portion of them are stated to have contained a quantity of Pratt's motor spirit. In some way or other the oil or the vapour from it caught fire and the whole contents of the lorry were soon blazing fiercely. Some of the cans exploded and the street became a "river of fire." Eventually the fire burned itself out, being kept within bounds by the Fire Brigade. No lives were lost and not much damage seems to have been done. The accident, however, is very important as regards the legal regulations, if there be any such, for the carrying of highly inflammable and explosive materials through the streets. We see it stated that there may be an inquest held by the City coroner, but in the meantime we may ask whether there is nothing in the Petroleum Hawkers Act, 1881, upon which action might be taken. "Petroleum" for the purpose of this Act would certainly seem to include motor spirit, and "A person shall be deemed for the purposes of this Act to hawk petroleum if by himself or his servants he goes about carrying petroleum to sell, whether going from town to town or to other men's houses, or selling it in the streets of the place of his residence, or otherwise, and whether with or without any horse or other beast bearing or drawing burden." If this Act does apply the regulations in Section 2 thereof seem to have been contravened.

THE CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.

THE annual dinner of this society was held in Paris at the Hôtel Quai d'Orsay on Oct. 5th. Owing to the International Congress on Tuberculosis being held during the same week a large company assembled, altogether about 60 being present. In the unavoidable absence through illness of Professor W. Osler Dr. StClair Thomson occupied the chair, and amongst those present were Dr. Landolt, Dr. Galliard, Dr. Caster, the Hon. Alan P. Herbert, M.D., Sir William H. Broadbent, Dr. C. Theodore Williams, Dr. H. T. Bulstrode, Dr. S. H. Habershon, Professor J. Chiene, Professor E. J. McWeeney, Dr. Flick (Philadelphia), and Dr. L. N. Robinson (secretary). The chairman, rising after the termination of the banquet, read a letter from Professor Osler regretting his inability to be present. He then proposed the first toast, "The Patrons of the Society, Past, Present, and Future—namely, H.M. King Edward VII., President Loubet, and President Roosevelt." The second toast was also proposed by the chairman, "Success to the Continental Anglo-American Medical Society." He explained that the society was founded by Dr. Lynn and that there were 110 members.

It was intended as a bond of union between English and American medical men practising on the continent of Europe and in north Africa. It was founded for mutual advantage and good fellowship. Also, that it might become generally known that there were medical practitioners of repute engaged in the practice of their profession in European and North African towns. Dr. Bull replied on behalf of the society. The Hon. Alan P. Herbert proposed the health of the guests, of whom a large number were present, and in a felicitous speech welcomed them to the annual dinner of the society. Sir William Broadbent replied for England, Professor Chiene for Scotland, Professor McWeeney for Ireland, Dr. Flick for America, Sir W. Kingston (Canada) for "Our Dominions beyond the Seas," and Dr. Galliard for France. In conclusion, the chairman proposed the health of Dr. Robinson, the third secretary of the society since its existence, and he also referred to the respect in which Dr. Herbert, the doyen of the continental English practitioners, was held by all English and American medical men throughout Europe. Dr. Robinson having replied general conversation was indulged in. A most enjoyable evening was spent and the visitors departed with every good wish for the progress of a most useful society.

THE medical officer of health of the Cape Colony states that for the week ending Sept. 23rd the condition of the colony as regards plague was as follows. No case of plague in human beings was discovered anywhere in the colony. 1 plague-infected rat and 1 plague-infected mouse were found at Port Elizabeth. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on Oct. 13th states that for the week ending Oct. 12th there occurred 31 cases of plague and 16 deaths from the disease.

AN address will be given by Sir Frederick Treves on Oct. 27th, at 3.30 P.M., at the Royal Pavilion, Brighton, on the Army Medical Service. Sir Frederick Treves is expected to give an important address on what is a matter of great public interest. Dr. Arthur Newsholme, medical officer of health and president of the Brighton and Sussex Medico-Chirurgical Society, is issuing the invitations in the name of the council of the society.

THE opening demonstration at the Hospital for Consumption and Diseases of the Chest, Brompton, will be given by Dr. A. H. Greg on Wednesday afternoon, Oct. 25th, at 4 P.M., the subject being Examination of the Chest by the X Rays. The lectures and demonstrations are free to all qualified medical practitioners and to students attending the practice of the hospital.

Mr. Alderman T. B. Crosby, M.D. St. And., who stands first in rotation among the aldermanic body to serve the office of sheriff of the City, will present himself for election at the next assembly of the Livery. Dr. Crosby, who is a past-master of the Turners' Company, has been a member of the Corporation for 26 years and an alderman since 1898.

IN celebration of the opening of the Simplon Tunnel the first International Exhibition held under the ægis of the Kingdom of Italy, to which the British Government has voted £10,000 for the equipment of the British Section, will be held at Milan in April next.

Mr. Henry Morris, F.R.C.S. Eng., the senior surgeon of the Middlesex Hospital, has made the munificent gift of £1000 to form the nucleus of a permanent endowment fund for the maintenance of the Medical School of the Middlesex Hospital.

THE sittings of the Royal Commission on Motor Cars began on Oct. 16th at 1, Chapel-place, Delahay-street, Westminster, when it was decided that the meetings should not be open to the press.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS AT PARIS.

(FROM OUR SPECIAL CORRESPONDENTS.)

THE SECTIONS.

OCT. 3RD.

FIRST SECTION.

A DISCUSSION took place on

The Early Diagnosis of Pulmonary Tuberculosis.

Three reports had been presented to the Congress. The first was by Dr. C. ACHARD (Paris). He commenced by alluding to the great progress which had been made in all branches of medicine during the past century and said that he thought that the art of diagnosis had become more perfect and had extended its borders. The special interest and importance which were attached to the early diagnosis of tuberculosis, not only for the purpose of detecting disease but also as an aid to prophylaxis, had been the means of causing several new diagnostic measures to be introduced. Most of these, however, were too complicated or too delicate to be of use to the general practitioner. The old methods, therefore, still remained and would be those generally relied upon. Nevertheless, the new measures must not be rejected in haste; they might prove of great value in special cases. The general build and appearance of the patient, the family history, and the manner in which the ordinary functions of life were carried on might give the first hints as to the disease from which any particular patient was suffering. The local examination might confirm these suspicions. Whether tuberculosis affected the joints or whether it affected the lungs it was this examination, carried out without the assistance of the laboratory (although its resources were great), on which the practitioner would lay most weight. The speaker laid stress on the importance of noticing the daily range of temperature. In a tuberculous subject a rise of temperature was readily produced by means which did not affect a healthy individual; the effect of exercise on temperature should be particularly noticed. The examination of the urine did not give much help. The estimation of the respiratory exchange seemed to promise aid in the future but at present its technique was not free from objection. He considered the use of the x rays to be of considerable value; they indicated the existence of obsolete or quiescent lesions which were difficult to recognise by other means. In cases of pleurisy of doubtful nature cyto-diagnosis was helpful but bacteriological examinations, by means of inoculations and cultures, were much more reliable. But however perfect the technique, the bacillus was not always found and in very early cases negative results were not infrequent. The injection of tuberculin also yielded assistance but it was not free from objection. The agglutination test had not yet been satisfactorily established.

The second report was by Dr. M. F. MARIANI (Geneva). He commenced by remarking that the chances of success in the treatment of tuberculosis increased in proportion the earlier the diagnosis was made. Therefore any signs which suggested a predisposition to tubercle should be carefully looked for. Among such symptoms were adenoids, intercostal neuralgia, herpes zoster (in a few cases), anæmia, dyspepsia, achlorhydria, enlargement of the thyroid gland, a constantly rapid pulse in the absence of fever, a peculiar colour of the gums, a rise of temperature caused by fatigue, a tendency to profuse sweating, a dry (sometimes spasmodic) cough (often scarcely observed by the patient), dyspnœa on slight exertion, hæmoptysis (this sometimes being the only symptom), and muscular atrophy (chiefly noticed in the scapulo-thoracic muscles and in the sterno-cleido-mastoid). With regard to physical examination, he considered percussion to be of only slight value in the early diagnosis of pulmonary tuberculosis. Auscultation yielded more reliable

evidence and the slightest modifications in rhythm and pitch of the respiratory sounds should be carefully studied. He was of opinion that radioscopy was a valuable addition to the other methods of examination.

The third report was by Dr. C. THEODORE WILLIAMS (London) and was well received. He showed some old stethoscopes which dated back to the time of Laennec; his father (Dr. C. J. B. Williams) had been a pupil of the famous French physician. One of the stethoscopes was actually made by Laennec himself. Dr. Williams proceeded to say that whilst the brilliant discovery of Professor Roentgen had not thrown so much light on thoracic pathology and treatment as it had on the diseases and fractures of bones and on the presence of foreign bodies in various parts and organs of the human system, yet it had undoubtedly rendered important help in the diagnosis of consolidations of the lungs of all kinds, in the detection of fluid or air in the pleura, and in that of mediastinal growth. The rays assisted in detecting tubercle by indicating the restricted movements of the diaphragm on the affected side, and by producing a dark shadow over the area of consolidation as contrasted with the brilliancy of the healthy lung, the extent of shading varying from a "mottling," which was very characteristic, to a dense black shadow when the infiltration was considerable. Caseous masses and fibrosis both yielded dense shadows, and cavities could be recognised as bright spots in the midst of the dark shadows of tuberculous infiltration. Pneumothorax produced a brilliant effect on the fluorescent screen. He thought that radioscopy was most useful in detecting tubercle in the presence of emphysema and in defining the extent of the lesion. Dr. Williams, in summing up this part of his subject, said that with regard to the question of early detection of tubercle by physical signs or by the Roentgen rays the evidence of the cases submitted to him appeared to fall into three classes: (1) where early pulmonary tuberculosis was indicated by the rays before its detection by auscultation and percussion; (2) where the presence of tubercle was localised simultaneously by Roentgen rays and physical signs, and this was far the most numerous class; and (3) where physical signs detected lesions which were undetected by the Roentgen rays. This class was quite as numerous as Class 1. The value of the presence of the pathogenic bacillus in the sputum and other secretions could not be over-exaggerated. Recent research had shown, however, that the well-known Weigert-Ehrlich-Ziehl stain test did not entirely separate the tubercle bacillus from other acid-fast bacilli, such as the Timothy and the grass bacilli of Moeller and the Petri Rabinowitsch butter bacillus, though these rarely appeared in human sputum. Dr. Williams then referred to the tuberculin test. He said that Tuberculin T. (Koch's old tuberculin) had been used for diagnostic purposes at the Brompton Hospital, and out of 27 cases of early lung tuberculosis 12 gave a positive and 15 a negative reaction. The dose employed was from 0·1 to 1 milligramme in the positive cases, but in the negative cases it was raised in several instances to 3 and 5 milligrammes without reaction.

Dr. TURBAN (Davos) said that he did not attach any importance to the Roentgen rays as an aid to the early diagnosis of pulmonary tuberculosis.

Dr. ARTHAUD (Paris) considered that the pneumographic method was of value in aiding the early diagnosis of tubercle. The respiratory conditions should also be carefully noted, especial attention being paid to their frequency and amplitude. He agreed with Dr. Achard that the physical examination should always be carefully undertaken and insisted on certain points in such an examination, such as minute alterations in the percussion note. He thought also that interrupted breath sounds often indicated a diseased condition.

Dr. RENAULT (Paris) mentioned several methods of physical examination, especially the employment of diapason (Mignon) applied over the apex of the lung.

Dr. MARIANI, in replying, laid stress on the examination of the urine in supposed tuberculous subjects. The urine should be concentrated in the cold and submitted to dialysis in order to try to obtain the agglutinating substance. Antitoxins might in the same manner be easily demonstrated.

Dr. ACHARD, who also replied, again pointed out the extreme importance of an early diagnosis of tubercle.

Of other communications read at this section we may mention the following:—

Dr. HENNECART (Sedan) on

The Diagnosis of Pulmonary Tuberculosis by the X Rays.

He thought that it was of importance to control by means of examination by the x rays the results obtained by auscultation and percussion in suspected cases of early pulmonary tuberculosis, especially when the search for tubercle bacilli had proved negative. He had made observations in all on 59 cases but some of his results had been previously recorded. The investigation had been conducted on the lines suggested by Dr. Williams of Boston. In the 59 cases examined the three cardinal signs insisted upon by Dr. Williams were all found in 23, or in 39 per cent; a diminution in transparency over the affected apex appeared in 76 per cent. of the cases; the sinking of the diaphragm on the affected side was noted in 52 per cent.; and a want of clearness of the lung shadow was demonstrated in 30 per cent. Dr. Hennecart preferred radioscopy rather than radiography in making these examinations, thus confirming the researches of Dr. Bercière of Paris. He further urged that on account of the ease, rapidity, and safety with which such examinations could be made in the important schools all students should be examined at least once by the Roentgen rays. A great service would thus be rendered in ascertaining whether young male adults were suitable for military service. This mode of investigation might also be useful in examining candidates for life insurance.

Professor A. MÖLLER, Dr. E. LÖWENSTEIN, and Dr. E. OSTROWSKY (Dresden) gave the results of their observations on

A New Method of Diagnosing Pulmonary Tuberculosis by Tuberculin.

Although tuberculin had been shown to be useful in the diagnosis of doubtful cases of pulmonary tuberculosis no uniform method of procedure had yet been introduced. Hitherto it had been considered necessary gradually to raise the dose of tuberculin in order to ascertain whether a local or general reaction could be obtained. The methods of procedure hitherto in use had not given absolutely uniform results and therefore the value of tuberculin in diagnosing tuberculosis in man was likely to be underestimated. The new method was based on the researches of Dr. Löwenstein and Dr. Rappoport, and these observers had shown that it was not necessary to employ tuberculin in gradually increased doses when using it for diagnostic purposes. The procedure consisted in administering the minimal dose of two-tenths of a milligramme of Koch's tuberculin in adults and one-tenth of a milligramme in children and if necessary repeating the injection after an interval of three or four days. Experience had convinced Professor Möller, Dr. Löwenstein, and Dr. Ostrowsky that by thus using small equal doses of tuberculin in patients suffering from tuberculosis a reaction was always obtained by from one to four injections. These results had been further confirmed by 150 positive observations carried out for a period of two years in the sanatorium at Belzig. The advantages claimed for this method were the following: (*a*) The reaction produced by the injection of tuberculin in doses of two-tenths of a milligramme can be easily obtained in patients suffering from tuberculosis and therefore was of special use when the disease had only lasted a short time and when the diagnosis was frequently doubtful. (*b*) The tuberculous foci in the lungs were not influenced by such small doses but not more than four injections should be given. The injections might be given without danger and even if the morbid process were undergoing spontaneous cure unfavourable results did not follow. (*c*) The unpleasant symptoms sometimes produced when injections of tuberculin were given in gradually increasing strength were not experienced when the small equal doses here recommended were administered.

A short communication was read by Dr. W. J. FROMENT (Lyons) on

The Sero-diagnosis of Tuberculosis in Old Persons.

Dr. Froment had examined 150 old adults by means of tuberculous serum reactions, employing the method introduced by Dr. Arloing and Dr. Courmont, and had arrived at the following conclusions: Positive serum reactions were less frequent in old persons as compared with those produced in young adults (in the proportion of about 23 to 100). A reaction was produced only when an active tuberculous process was taking place in the body; for instance, when a fibro-caseous focus existed. In old people small foci of quiescent tubercle were more frequently met with but they must be considered as possessing a latent activity. Occasionally also patches of "pulmonary sclerosis" were met with which probably had a tuberculous origin.

Dr. F. M. POTTINGER and Dr. C. C. BROWNING (California) contributed a paper entitled

Clinical Study of Mixed Infection in Tuberculosis.

From their observations they drew the following conclusions: 1. The result of various investigations showed that streptococci were found in the lung tissue beyond the necrotic areas and might be present without causing any acute symptoms. 2. Certain products evolved by the tubercle bacillus were capable of producing symptoms very similar to, if not identical with, those resulting from a so-called "mixed infection." It was probable that these symptoms were sometimes due to the one cause, sometimes to the other, and perhaps at times both infections were active simultaneously. 3. The streptococcus sometimes played a part in the mixed infections of tuberculosis. A streptolytic serum produced some specific action in such cases, as demonstrated by the reduction of the temperature and abatement of other symptoms. Further, the streptococcus had some effect on the general progress of the tuberculous process in more chronic cases without, however, producing marked symptoms. This was proved by the result of the administration of a streptolytic serum; the sputum then became thinner, less purulent, and was reduced in quantity. 4. The employment of the serum in cases in which no acute symptoms were present appeared to exert a favourable influence on the course of the disease and in a sufficient number of cases to suggest that the presence of the streptococcus affected the tuberculous process unfavourably, even when no active phenomena were present. A mixed infection, then, was a factor to be dealt with before the advent of more threatening symptoms in a similar manner to that in which tuberculosis might be diagnosed and treated before an urgent condition was manifest. 5. This field of study was worthy of further investigation but Dr. Pottinger and Dr. Browning did not feel justified in drawing any more conclusions than those mentioned above. They trusted that their results would warrant further inquiry into the matter.

Dr. M. B. RAVENEL and Dr. J. W. IRWIN (Philadelphia) likewise contributed a paper on

Studies in Mixed Infections in Tuberculosis.

This communication was described by Dr. Ravenel and Dr. Irwin as a preliminary report from the laboratory of the Henry Phipps Institute for the study, treatment, and prevention of tuberculosis. Two lines of study had been followed: (1) routine examination after death of the lungs, the kidneys, the liver, and the spleen of tuberculous subjects; and (2) examination of the washed sputum during life. Their results were briefly as follows: In the lung the streptococcus was found 23 times, bacillus coli communis 20 times, staphylococcus albus 19 times, staphylococcus aureus 11 times, pneumococcus 4 times, and bacillus diphtheriæ 5 times; other unimportant organisms were also met with. In the kidney, bacillus coli communis 12 times, streptococcus 8 times, staphylococcus 4 times, pneumococcus twice, typhoid bacillus once, and bacillus diphtheriæ once. In the liver, bacillus coli communis 6 times, streptococcus once, bacillus pyocyaneus once, staphylococcus albus once, staphylococcus aureus once, and pneumococcus once. In the spleen, streptococcus 4 times, staphylococcus albus once, staphylococcus aureus once, and bacillus coli communis twice. In the washed sputum, streptococcus 22 times, staphylococcus aureus 11 times, staphylococcus albus 9 times, bacillus coli communis 4 times, bacillus diphtheriæ twice, and pneumococcus once. In cases of doubt (as, for instance, when the typhoid bacillus was found in the kidney) the identity of the organism was established by cultures and inoculation experiments.

Professor BOUCHARD and Dr. BALTHAZARD (Paris) presented a communication on

The Heart in Tuberculous Subjects.

They commenced by saying that, thanks to the employment of the x rays, it was now possible to measure the exact dimensions of the heart orthogonal projection. In the first stage of pulmonary tuberculosis the heart was smaller than normal and the same condition held in the second stage. The small size of the heart was therefore characteristic of a tuberculous soil—that is to say, one of the dystrophies which predispose to tuberculosis. In the third stage, on the contrary, the heart was larger than normal. Hypertrophy developed without dilatation. This was probably brought about by the increased tension in the pulmonary circulation caused by the development of caseous and fibrous lesions in the lungs. This observation explains the apparent contradictions which have existed in the observations of other authorities, the dimensions of the heart in tuberculosis having been mainly studied in the post-mortem room and not during life.

Dr. L. L. LANDOUZY and M. LABBÉ (Paris) drew attention to the connexion between chlorosis and tuberculosis in a paper with the title

The Chlorotic Form of Tuberculosis.

According to the authors many patients were seen apparently suffering from chlorosis but who were really affected with tuberculosis. The typical symptoms and signs of chlorosis were present—pale and puffy face, hæmic murmurs, palpitation, dyspeptic and menstrual irregularities, and the characteristic condition of the blood. This opinion was formed after numerous observations relating to the past history, present condition, and clinical progress of chlorotic individuals. It was found that such persons often gave a family history of tuberculosis; in childhood they frequently gave evidence of "bacillary manifestations" (such as enlarged glands in the neck, affections of the joints, lupus, or pleurisy). At puberty chlorosis appeared and some years later pulmonary tuberculosis developed. If chlorotic patients were carefully examined pulmonary tuberculosis, generally limited to one apex, could often be detected. A reaction could sometimes be obtained with tuberculin when other diagnostic measures failed. Chlorosis might be an important element in the early diagnosis of pulmonary tuberculosis.

SECOND SECTION.

The principal discussion in this section, that of Surgical Pathology, related to

Ileo-cæcal Tuberculosis.

The first report was presented by Dr. A. DEMOULIN (Paris). After giving an anatomical description of the ileo cæcal segment of the intestine Dr. Demoulin proceeded to point out that tuberculosis when attacking the intestine was sometimes exclusively confined to this segment. Tuberculous lesions as a rule, however, did not confine themselves within anatomical restrictions and the term ileo-cæcal might possibly give rise to confusion. Dr. Demoulin adopted the classification first suggested by Dr. Bérard and Dr. Paul of Lyons distinguishing three forms of ileo-cæcal tuberculosis: 1. The ulcerous form, the lesions being limited to the mucous lining of the bowel. Such ulcers might heal. A fibrous cicatrix formed which by its contraction might bring about constriction of the small intestine and atrophy of the cæcum. 2. The "entero-peritoneal" form (named by former observers tuberculous typhlitis with perityphlitis). The tuberculous lesions exhibited ulcerations which penetrated more deeply the coats of the intestine and were complicated by tuberculous changes in the peritoneum, mesentery, and neighbouring lymphatic glands. The etiology, symptoms, diagnosis, prognosis, and treatment of this variety were carefully described. These two forms were secondary in origin and were found in patients suffering from tuberculosis of other organs. 3. The hypertrophic form, which was characterised by the formation of a tumour in the ileo-cæcal region. It was generally met with in patients who did not present tuberculous lesions elsewhere and it might therefore be considered as primary in origin. The disease usually commenced in the cæcum or at the ileo-cæcal angle and produced a very marked thickening of the coats of the intestine. The bowel was surrounded by a band of thickened tissues in which degenerated lymphatic glands were not unfrequently found. The entero-peritoneal form was generally complicated by the formation of fistulæ. Dr. Demoulin drew attention to the fact that tuberculous adenitis sometimes occurred in the ileo-cæcal region without involvement of the intestine and was usually mistaken for appendicitis. Ileo-cæcal tuberculosis was slightly more common in men than in women and usually occurred between the ages of 20 and 40 years. The diagnosis was generally obscure and the differentiation from appendicitis was often very difficult. The hypertrophic form might be confused with malignant disease. The appendix was rarely attacked primarily by tuberculosis but might exhibit lesions in common with the cæcum and ileum.

The second report was by Dr. ROUX (Lausanne) who said that he recognised two forms of ileo-cæcal tuberculosis—a diffuse ulcerative type and a "pseudo-neoplastic" variety,

sometimes known as the "hypertrophic form." Early operation in both might prove of benefit. He did not think that the coexistence of pulmonary tuberculosis necessarily contra-indicated operation. He then proceeded to describe the symptoms of ileo-cæcal tuberculosis. The earliest clinical signs of the ulcerative form were similar to those of an enteritis. They were more especially characterised by a copious secretion into the lumen of the bowel, with or without hæmorrhage. The symptoms produced by the second variety were vague; digestive troubles, with apparently causeless vomiting, and then perhaps the accidental discovery of a tumour, a dull pain, generally localised, but sometimes felt all over the abdomen, sometimes epigastric. Colic might occur which was instantly relieved by the passage of flatus. These signs should lead the surgeon to examine carefully the ileo-cæcal region. With regard to treatment, he hoped that in the future serotherapy would hold out the greatest expectation of cure. In a few cases simple laparotomy with removal of the appendix sufficed, in others partial resection of the cæcum might be practised. More often excision of a loop of intestine was required.

The third report was by Professor DEPAGE and Dr. PINEHART (Brussels) who laid stress on the differential diagnosis of ileo-cæcal tuberculosis. Some help might be obtained by the examination of the stools for tubercle bacilli. The injection of tuberculin had also been suggested. Operative treatment was sometimes of avail.

THIRD SECTION.

In this section after the discussion on the Prevention of Tuberculosis in Schools[1] some interesting communications were read, amongst which was one by Dr. GASTON (Paris) on

The Site of Entry of the Tubercle Bacillus in the Child.

He drew attention to certain preliminary points that had to be investigated when studying tuberculosis as it occurred in children. The first was the hereditary nature of the disease and the second was the frequency of local tuberculosis in young life, exemplified by enlarged glands, tuberculosis affecting the cutaneous system, and tuberculous disease of the joints and bones. The predisposition to tuberculous infection on the part of the child partly resulted from certain dystrophies produced either by hereditary or by acquired influences. Amongst the most important of these might be mentioned tuberculosis (in the parents), alcoholism, syphilis, acute or chronic diseases (other than infectious), errors of nutrition acquired by the child, the eruptive fevers, especially measles, faulty digestion and assimilation, the want of pure air and light, and the results of poverty. These various conditions seemed to prepare the soil and render it a favourable pabulum for the tubercle bacillus. The bacillus entered through the lymphatic system, the mucous membranes, or through the skin; it further developed in the lymphatic glands and the disease could then spread to other parts of the organism. The mode of entry through the mucous lining of the respiratory and digestive tracts was fully appreciated but Dr. Gaston maintained that in the child the principal path of entry of the bacillus was through the skin. In proof of this assertion he instanced the frequent occurrence of lupus affecting the nose and cheek and the tuberculous infiltration of the submaxillary and cervical glands in the child. He then drew attention to the differences which were noticed in the mode of spread of tuberculosis in the infant and in the child respectively. In the former (denoting by the word "child" the period of first dentition) tuberculosis was distributed by means of the lymphatic system with great rapidity, producing the well-known miliary form. In the latter (the older child) the organism reacted to the bacillus, as when an adult became infected, but the face and nose were still the most frequent sites for the entry of the bacillus. Two distinct clinical types of cases could be distinguished—a direct inoculation producing lupus and an indirect characterised by an affection of the lymphatic glands. The frequency of lupus on the cheek and nose in the child was probably caused by the infection being carried by means of kissing, or by the handkerchief, or by the finger. These considerations gave valuable indications as to the prophylaxis of tuberculosis in the child and due instructions should be given to the parents as to the dangers that might arise if they themselves or other members of the family were the subjects of pulmonary tuberculosis.

[1] THE LANCET, Oct. 7th, 1905, p. 1067.

Thursday in this section, as in the others, was entirely devoted to excursions, while on Friday the whole day was devoted to the reading of numerous communications dealing mainly with the therapeutics of tuberculosis. Three reports were received on

New Methods for the Treatment of Lupus.

The first was by Dr. JEANSELME and Dr. CHATIN (Paris). They considered seriatim the various therapeutic measures which during recent years had been introduced for the local treatment of lupus. They had come to the conclusion that phototherapy yielded good results if properly carried out and every detail must be carefully observed. The patient must be so placed that the affected portion of his skin was in the exact focus of the rays. This condition was assured when the luminous disc had a perfectly circular shape not larger than a shilling piece. Proper and continuous pressure must be applied. For this purpose various forms of apparatus had been designed but nothing acted more satisfactorily than manipulation by the hands of the operator. The exposure to the light ought to be rather long—an hour at least—but the sitting might be divided into two parts if desired. The reaction of the tissues differed in various patients. As a rule, the surface of skin submitted to the action of the light became reddened and small vesicles might appear. Occasionally there was a considerable amount of inflammatory infiltration which might even resemble erysipelas, but these phenomena rapidly subsided. The resulting cicatrix was pliant, never exuberant or keloid in character; it remained permeable to chemical rays, so that if there should be a partial recurrence the light treatment might again be employed. Professor Finsen's statistics were quoted to show the success which had been obtained by the originator of this therapeutic measure. Phototherapy was specially indicated in cases of lupus vulgaris which were limited in extent and were of recent occurrence. Radiotherapy was now considered to be free from danger on account of the improvements in technique which had been introduced. It was valuable when the disease was extensive and had the advantage over phototherapy in being able to act at once over large surfaces, thereby considerably shortening the duration of the treatment. The lupus nodules which were not affected by the Roentgen rays could afterwards be submitted to the light treatment. Some forms of lupus erythematosus also responded favourably to the action of the x rays, especially the aberrant variety. The action of radium was also referred to and the opinion of Dr. Danlos was quoted—namely, that radium is useful in the treatment of small patches of lupus which can be completely covered by the disc which protects the skin from direct contact with the metal. High-frequency currents had been found useful in treating some cases of lupus erythematosus. In conclusion, Dr. Jeanselme and Dr. Chatin uttered the warning that the older methods used in the treatment of lupus—e.g., scarification and the galvanic cautery—must not be entirely abandoned in the enthusiasm which had arisen in favour of the newer methods.

The second report was presented by Dr. H. FORSCHHAMMER (Copenhagen) who gave the following conclusions at which he had arrived as the result of his observations: 1. In the treatment of lupus vulgaris the general health of the patient must be carefully attended to, as was necessary in all forms of tuberculosis. 2. Complications must be looked for, especially the involvement of mucous surfaces, which required close attention. 3. The cutaneous lesions required energetic local treatment and it was necessary to watch the results over a period of some years. 4. Phototherapy should not entirely replace other methods of treatment but it had attained a prominent place in the treatment of the disease. By its means a large number of permanent cures might be obtained and the resulting cicatrices were more favourable than those obtained by any other method.

The third report was by Professor E. LESSER (Berlin). He was of opinion that both phototherapy and radiotherapy represented an extremely important progress in the treatment of lupus. The cicatrices obtained after the light treatment had been adopted were better than those obtained by any other method. Both of these therapeutic measures, however, had their limits. The disease might extend owing to the involvement of the mucous membrane or from the presence of scars which had resulted from previous inadequate treatment. But even in such cases and when the disease was very extensive the new methods, as a rule,

yielded more favourable results than had hitherto been obtained.

Mr. MALCOLM MORRIS (London) read a paper on

The Light Treatment of Lupus Vulgaris,

which was an abstract of work performed during the last five years. This will be published in full in a future issue of THE LANCET.

FOURTH SECTION.

The debates in this section were long but their length was justified because the problems involved were absolutely practical. This was essentially the legislative section and the reports will be studied by members of Parliaments and of municipalities and by all who have administrative duties to perform. It was presided over on the first day by Professor Landouzy and M. Paul Strauss, the well-known senator and sanitary reformer. Among many other legislators present a former President of the Republic, M. Casimir Perier, was in constant attendance. The first great question discussed was—

The Influence of Insurance and Benefit Societies in the Struggle against Tuberculosis.

Naturally it was from Germany that most information was expected and the Privy Councillor of State BIELEFELDT presented a report on the subject in which he argued that the most powerful of all weapons against the spread of tuberculosis was undoubtedly the system of compulsory insurance enforced throughout the German Empire. These mutual insurance funds have distributed as help to the sick, to their families, to women at childbirth, to families after a death, &c., from the year 1885 to the year 1903 a total sum of £55,898,124. The insurance societies and mutual assurances against sickness or invalidity have paid as sick allowances, aid to families, and pensions, from 1891 to 1903, the sum of £40,777,511. By these means the families of the poorer classes are saved from ruin when struck down by sickness. All such prevention of extreme poverty acts as a preventive to the spread of tuberculosis. But apart from this indirect action direct means are likewise employed. From 1897 to 1904 no less than 101,806 persons suffering from pulmonary tuberculosis have been sent to special establishments where they received in all 7,687,805 days of treatment at a cost, says the report, of £7,000,000. This, of course, must be an error. The patients cannot have cost nearly £1 per day per head, unless this includes the building of sanatoriums. Of these patients 83,000 were sent to sanatoriums devoted exclusively to the treatment of tuberculosis and 9000 were sent to the most celebrated health or climatic stations not merely of Germany but also of other countries. The results were that the percentage of patients who, five years after treatment, were still so far well able to work that they did not require any sick allowance from their insurance funds amounted to 27, 31, 32, and 31 per cent. for the patients treated during the years 1897, 1898, 1899, and 1900. The insurance funds have spent £10,550,000 for the construction of sanatoriums and £6,650,000 for the construction of workmen's dwellings. Some idea of the good done may be gathered from the fact that whereas 88,283 deaths in Prussia were attributed to tuberculosis in 1886, the number in 1902 was reduced to 66,726, and this notwithstanding the increase of population. Dealing with the German Empire the mortality in towns of more than 100,000 inhabitants was 37·36 per 10,000 in 1886 and in 1902 it was 22 per 10,000. Herr Bielefeldt insisted that these results were due to the law on compulsory insurance, for the administration of these insurance funds provided all the machinery necessary for the struggle against tuberculosis.

Thus, for instance, experience shows that in spite of their number the accommodation in the sanatoriums is still insufficient to meet the demand. Again, it often happens that unsuitable cases are sent there. Some patients are too far advanced. Thus it has come about that since 1899 a new weapon has been forged for the good fight. This consists of suburban galleries for the air cure. These are installed in forests or parks on the outskirts of large towns where they cost very little. There are conveyances to take the patients from their private homes in the morning and to bring them back in the evening. Thus they are kept in pure open air during the whole day, are made to rest, and are well fed. Their symptoms can be carefully studied and those most likely to benefit from the complete sanatorium treatment can be selected and sent away. These suburban air-cure galleries, as they are called, have been of such use and are so inexpensive that their number has rapidly increased. In the neighbourhood of Berlin there are nine such places and three of them are reserved exclusively for children. At Charlottenburg a school has been added to this institution, so that the children may continue their lessons while spending the whole day in the open air. But it is not merely a question of treatment, it is likewise one of prevention; and with compulsory insurance it is everybody's interest to prevent illness, especially illnesses like tuberculosis, which impose heavy financial burdens on the healthy.

After this vast German experience both the French and the British reporters on the subject had but little to say. In France a recent law enforces the granting of relief to the aged, the infirm, and the incurable, but M. EDOUARD FUSTER did not think that this would apply to cases of tuberculosis. He declared, on the contrary, that a law for compulsory insurance was indispensable. For Germany such a law had enabled the accumulation in from eight to ten years of a fund of £21,000,000, which was subscribed by workmen and their employers and which was devoted to works of sanitation, social prophylaxis, and relief. Not but that there were some defects, especially the fact that children were left out of the reckoning, and Germany had no such institutions as those founded by Professor Grancher and Dr. Armaingaud. Also the minutiæ of control which in Germany had to be imposed was irritating, and the steady members of the community had to suffer from the rules and regulations enforced so as to control the unsteady or unreliable individuals. M. Fuster thought that Frenchmen were much less submissive than the Germans and would not tolerate such iron discipline. Then the Germans defined "invalidity" as incapacity to earn more than one-third the wages earned when in good health, and he argued that this mode of appreciation was too arbitrary. He was of opinion that invalids of this description might be coupled with the s[ick] and treated financially in the same manner. M. Fuste[r] seemed to think that a part of the insurance service[s] be left to the benefit societies which could help th[em] covering the entire ground. But, of course, t[he] societies must all federate, for it was only w[ith] that they could help to carry out a national sche[me].

For Great Britain Mr. CHARLES H. GARLAN[D] of the National Association for the Establ[ish] Maintenance of Sanatoriums for Workers suf[fering] Tuberculosis, was not even able to say as much [as] could only confess that in these matters his c[ountry] behind the age. Neither the insurance compan[ies] benefit societies had as yet taken any effective [part] part in the struggle against tuberculosis. The ev[il] existence he thought showed it was not likely th[at] payment by patients during a few years more of [the] insurance policies would suffice to cover the cost of providi[ng] curative treatment. The canvassers, however, of insurance companies might very well be employed as education agents to deliver pamphlets and handbills showing how tuberculosis could best be avoided. Such propaganda work would be in the interests of the companies which they represented. For trade unions and friendly societies the case was different. They paid sick allowance and the Order of Foresters found that those of their members who suffered from tuberculosis cost on an average £14 more than any other invalids. With the Hearts of Oak Benefit Society the tuberculous patients were more expensive than all the others to the extent of an average of £17 17*s.* per head. It has been calculated that if these friendly societies were to institute a system of curative treatment this could be done at an average cost of £16 per patient. The economy resulting would more than compensate this cost. But apart from such purely financial calculations, and even if the money advantage does not correspond with these anticipations, several important trade unions and benefit societies have taken the matter in hand and propose to erect and to maintain some sanatoriums for the treatment of their members. In the meanwhile they have done something in the matter of education and are seeking to teach their members how to avoid the disease. Mr. Garland seemed to think that it would be possible in the course of time to erect many sanatoriums for the use of the members of friendly and other benefit societies.

Needless to say that this seemed very small and insignificant by the side of the sweeping measures and the colossal statistical records submitted by the German representatives.

The event, however, of the morning was the appearance of M. MILLERAND, not only on the platform but as a speaker. The former Minister of Commerce, of the Posts and Telegraphs, to whom France is indebted for so many large

measures of social reform, first expressed his doubt as to the possibility of carrying out M. Fuster's proposal to detach "invalidity" from old-age pensions and unite it with the insurances against sickness. Such a classification was logical but in France it was not yet practicable. In Germany the position was quite different. There they had 20 years of experience of compulsory insurance and the centralisation of all forms of insurance was becoming more and more acceptable. France had not reached that stage and must make its first efforts with great prudence. The friendly societies of France were taking active measures and it would be folly to start institutions that would be in antagonism to theirs. On the contrary, it would be the best policy to act in conjunction with them.

M. Millerand now raised a new and very important point. What, he asked, was going to be done with the very large sums of money that would be raised by a general scheme of insurance? Even if it was but a comparatively small scheme, still it would mean the accumulation of many millions paid in by workmen and by their employers. It was very natural, very logical, and quite legitimate that subscriptions paid in for a work of social protection should be invested in similar works of social protection and improvement. In this Germany has set the example. Whatever opinion may be entertained as to the results obtained it must be recognised that in Germany, where every year enormous sums of money are collected for insurance purposes, a very large capital has been invested in works of preservation. Thus is seen a practical application, and this on a gigantic scale, of the maxim that prevention is better than cure. Nevertheless, M. Millerand urged forcibly that the appli- of this principle must only be attempted in a very ner. Was it right, was it wise, to invest the lated by the insurance funds in enterprises ure that the ordinary capitalists would not g could be more just than to favour the em- a part of the money paid in for insurance rm. Bad housing, for instance, was one of tuberculosis and also of many other e capital collected for the purpose of tter invested than in the building and y dwellings as would very materially of sickness? But yet there was a t the managers of the funds might or in knowledge and make bad hat way and by what means could ol be established and how was it ribute equitably the responsibilities? who could be, the responsible inter- oubtless it was an admirable thing that nce subscription paid in should provide the ary money to build sanatoriums, but it was necessary that the money thus invested should ultimately be returned to its owners. M. Millerand thought that perhaps the great friendly societies could play the part of the necessary intermediaries between the State which might assume the responsibility of organising a system of insurance and the individuals insured who had to be guaranteed against the risk of loss if the money they had paid in was used for the building of sanatoriums and other similar enterprises.

After some further discussion the section adopted the following motions:—

1. It is desirable that the measures of general prophylaxis, as also of poor relief, should be completed by a system of insurance, to which should contribute the parties insured, their employers, and the State.
2. That it is desirable that "invalidity" which, as a rule, is but the prolongation of illness, should be protected by the same insurance organisations as those that deal with sickness.
3. That this insurance should not have for sole purpose the payment of sick allowances but its action should above all be preventive; works of sanitary improvement and of the treatment of the sick should form part of its functions.

Apart from this discussion based on the official reports prepared for the Congress a number of miscellaneous communications from individual members were read. Among these was a paper on

Prostitution and Tuberculosis,

by Professor P. SPILLMANN (Nancy). He urged that tuberculosis should be treated in the same manner as venereal diseases. He submitted the details of a number of cases that had come under his observation where prostitutes had been the means of spreading tuberculosis. Though the risk of contagion was not so great as in regard to syphilis it undoubtedly did arise as a consequence of intimate and repeated contact. Also tuberculosis was especially prevalent among the lower class of prostitutes, and therefore he urged that when prostitutes underwent the usual sanitary control they should also be examined for tuberculosis and that when a case of tuberculosis was found the same methods of segregation should be applied as in regard to syphilis. Professor ESPINA Y CAPO (Madrid) and Professor LANDOUZY both approved this proposition. The latter observed that as it was now recognised to be necessary in cases of tuberculosis to warn married couples to refrain from the most legitimate of caresses, surely the same precautions might be applied under conditions less legitimate and far more dangerous.

GUY'S PHYSICAL SOCIETY:

PROFESSOR W. OSLER ON SIR THOMAS BROWNE.

Professor William Osler, Regius professor of medicine at the University of Oxford, read an address on Oct. 12th before the Guy's Hospital Pupils' Physical Society on the Life and Works of Sir Thomas Browne. Before the delivery of the address Professor Osler was entertained to dinner by the members of the Guy's Hospital Pupils' Physical Society in the large dining hall of the Students' Club. The only toast at the dinner was that of "The King" and the only speech was made by the Chairman, Dr. F. TAYLOR, who said that the company might smoke. As soon as cigars had been lighted the chairman gave the signal to depart for the theatre and thereupon led the way across the gardens of the hospital to the physiological department followed by about 200 students. On arriving at the physiological department Professor Osler was welcomed in a side room attached to the theatre by Sir Samuel Wilks, the president of the Guy's Hospital Pupils' Physical Society. Everyone was delighted to see Sir Samuel Wilks and he received many congratulations from a large number of his friends. Seats had been reserved for those fortunate enough to have received invitations to dine with the society and directly these guests had taken their places Sir SAMUEL WILKS appeared from the side room and received a prolonged and enthusiastic ovation. After the cheering had died away he addressed the students, speaking clearly and strongly, telling them how rejoiced he was to see them once again, and excusing himself from taking the chair at the meeting of the society he called upon Dr. Taylor to perform that office. Dr. TAYLOR then introduced Professor Osler to the audience. Dr. Taylor was supported in his duties by Dr. W. Hale White, Sir Thomas Stevenson, Mr. W. Arbuthnot Lane, Dr. J. F. Goodhart, Dr. T. G. Stevens, and other members of the Guy's Hospital staff.

Professor OSLER, in commencing his address, claimed from the audience the customary indulgence which was always extended to a bibliomaniac at the hands of his saner brethren. He observed that he had long studied the works of Sir Thomas Browne, and in proof of this he pointed to a large table in front of him which was covered with copies of the works of Sir Thomas Browne. There were editions of the author's writings in Latin, in German, in Dutch, and in French, and amongst the books was a copy of the "Urne Burial" which was stated to have belonged to one of the sons of Sir Thomas Browne. Born in October, 1605, Thomas Browne was educated at Winchester and Oxford and went to Norwich in 1637. He there married and brought up ten children. In connexion with this Professor Osler mentioned that Sir Thomas Browne in early life had expressed himself in a hostile manner concerning women and considered it was unfortunate that some method less mean and trivial had not been found for the perpetuation of the human race. Concerning the publication of the "Religio Medici" Professor Osler mentioned with some slight emphasis that it was given to the world by Browne before he was 30 years old and quoted the author's contention that the magnetic force of a man commenced to fail after 30 years. Commenting on this, Professor Osler remarked that it was a sufficiently serious reflection for certain advanced thinkers who at the present time considered that a man was fit to work up to 40 years. The lecturer was proceeding to say what would happen to the man after that age but was interrupted with loud cheers and laughter. The statement attributed by the Canadian press to the lecturer that men past work should be anæsthetised

yielded more favourable results than had hitherto been obtained.

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Thus, for instance, experience shows that in spite of their number the accommodation in the sanatoriums is still insufficient to meet the demand. Again, it often happens that unsuitable cases are sent there. Some patients are too far advanced. Thus it has come about that since 1899 a new weapon has been forged for the good fight. This consists of suburban galleries for the air cure. These are installed in forests or parks on the outskirts of large towns where they cost very little. There are conveyances to take the patients from their private homes in the morning and to bring them back in the evening. Thus they are kept in pure open air during the whole day, are made to rest, and are well fed. Their symptoms can be carefully studied and those most likely to benefit from the complete sanatorium treatment can be selected and sent away. These suburban air-cure galleries, as they are called, have been of such use and are so inexpensive that their number has rapidly increased. In the neighbourhood of Berlin there are nine such places and three of them are reserved exclusively for children. At Charlottenburg a school has been added to this institution, so that the children may continue their lessons while spending the whole day in the open air. But it is not merely a question of treatment, it is likewise one of prevention; and with compulsory insurance it is everybody's interest to prevent illness, especially illnesses like tuberculosis, which impose heavy financial burdens on the healthy.

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For Great Britain Mr. CHARLES H. GARLAND, chairman of the National Association for the Establishment and Maintenance of Sanatoriums for Workers suffering from Tuberculosis, was not even able to say as much as this. He could only confess that in these matters his country was behind the age Neither the insurance companies nor the benefit societies had as yet taken any effective and active part in the struggle against tuberculosis. The evidence in existence he thought showed it was not likely that the payment by patients during a few years more of their insurance policies would suffice to cover the cost of providing curative treatment. The canvassers, however, of insurance companies might very well be employed as education agents to deliver pamphlets and handbills showing how tuberculosis could best be avoided. Such propaganda work would be in the interests of the companies which they represented. For trade unions and friendly societies the case was different. They paid sick allowance and the Order of Foresters found that those of their members who suffered from tuberculosis cost on an average £14 more than any other invalids. With the Hearts of Oak Benefit Society the tuberculous patients were more expensive than all the others to the extent of an average of £17 17*s.* per head. It has been calculated that if these friendly societies were to institute a system of curative treatment this could be done at an average cost of £16 per patient. The economy resulting would more than compensate this cost. But apart from such purely financial calculations, and even if the money advantage does not correspond with these anticipations, several important trade unions and benefit societies have taken the matter in hand and propose to erect and to maintain some sanatoriums for the treatment of their members. In the meanwhile they have done something in the matter of education and are seeking to teach their members how to avoid the disease. Mr. Garland seemed to think that it would be possible in the course of time to erect many sanatoriums for the use of the members of friendly and other benefit societies.

Needless to say that this seemed very small and insignificant by the side of the sweeping measures and the colossal statistical records submitted by the German representatives.

The event, however, of the morning was the appearance of M. MILLERAND, not only on the platform but as a speaker. The former Minister of Commerce, of the Posts and Telegraphs, to whom France is indebted for so many large

measures of social reform, first expressed his doubt as to the possibility of carrying out M. Fuster's proposal to detach "invalidity" from old-age pensions and unite it with the insurances against sickness. Such a classification was logical but in France it was not yet practicable. In Germany the position was quite different. There they had 20 years of experience of compulsory insurance and the centralisation of all forms of insurance was becoming more and more acceptable. France had not reached that stage and must make its first efforts with great prudence. The friendly societies of France were taking active measures and it would be folly to start institutions that would be in antagonism to theirs. On the contrary, it would be the best policy to act in conjunction with them.

M. Millerand now raised a new and very important point. What, he asked, was going to be done with the very large sums of money that would be raised by a general scheme of insurance? Even if it was but a comparatively small scheme, still it would mean the accumulation of many millions paid in by workmen and by their employers. It was very natural, very logical, and quite legitimate that subscriptions paid in for a work of social protection should be invested in similar works of social protection and improvement. In this Germany has set the example. Whatever opinion may be entertained as to the results obtained it must be recognised that in Germany, where every year enormous sums of money are collected for insurance purposes, a very large capital has been invested in works of preservation. Thus is seen a practical application, and this on a gigantic scale, of the maxim that prevention is better than cure. Nevertheless, M. Millerand urged forcibly that the application of this principle must only be attempted in a very prudent manner. Was it right, was it wise, to invest the capital accumulated by the insurance funds in enterprises that were so insecure that the ordinary capitalists would not venture? Yet nothing could be more just than to favour the employment of at least a part of the money paid in for insurance in works of social reform. Bad housing, for instance, was one of the principal causes of tuberculosis and also of many other diseases; how could the capital collected for the purpose of assisting the sick be better invested than in the building and letting of such sanitary dwellings as would very materially reduce the prevalence of sickness? But yet there was a very grave danger that the managers of the funds might fail in discernment or in knowledge and make bad investments. In what way and by what means could an efficient control be established and how was it possible to distribute equitably the responsibilities? Who would be, who could be, the responsible intermediaries? Doubtless it was an admirable thing that the insurance subscription paid in should provide the necessary money to build sanatoriums, but it was necessary that the money thus invested should ultimately be returned to its owners. M. Millerand thought that perhaps the great friendly societies could play the part of the necessary intermediaries between the State which might assume the responsibility of organising a system of insurance and the individuals insured who had to be guaranteed against the risk of loss if the money they had paid in was used for the building of sanatoriums and other similar enterprises.

After some further discussion the section adopted the following motions:—

1. It is desirable that the measures of general prophylaxis, as also of poor relief, should be completed by a system of insurance, to which should contribute the parties insured, their employers, and the State.
2. That it is desirable that "invalidity" which, as a rule, is but the prolongation of illness, should be protected by the same insurance organisations as those that deal with sickness.
3. That this insurance should not have for sole purpose the payment of sick allowances but its action should above all be preventive: works of sanitary improvement and of the treatment of the sick should form part of its functions.

Apart from this discussion based on the official reports prepared for the Congress a number of miscellaneous communications from individual members were read. Among these was a paper on

Prostitution and Tuberculosis,

by Professor P. SPILLMANN (Nancy). He urged that tuberculosis should be treated in the same manner as venereal diseases. He submitted the details of a number of cases that had come under his observation where prostitutes had been the means of spreading tuberculosis. Though the risk of contagion was not so great as in regard to syphilis it undoubtedly did arise as a consequence of intimate and repeated contact. Also tuberculosis was especially prevalent among the lower class of prostitutes, and therefore he urged that when prostitutes underwent the usual sanitary control they should also be examined for tuberculosis and that when a case of tuberculosis was found the same methods of segregation should be applied as in regard to syphilis. Professor ESPINA Y CAPO (Madrid) and Professor LANDOUZY both approved this proposition. The latter observed that as it was now recognised to be necessary in cases of tuberculosis to warn married couples to refrain from the most legitimate of caresses, surely the same precautions might be applied under conditions less legitimate and far more dangerous.

GUY'S PHYSICAL SOCIETY:

PROFESSOR W. OSLER ON SIR THOMAS BROWNE.

Professor William Osler, Regius professor of medicine at the University of Oxford, read an address on Oct. 12th before the Guy's Hospital Pupils' Physical Society on the Life and Works of Sir Thomas Browne. Before the delivery of the address Professor Osler was entertained to dinner by the members of the Guy's Hospital Pupils' Physical Society in the large dining hall of the Students' Club. The only toast at the dinner was that of "The King" and the only speech was made by the Chairman, Dr. F. TAYLOR, who said that the company might smoke. As soon as cigars had been lighted the chairman gave the signal to depart for the theatre and thereupon led the way across the gardens of the hospital to the physiological department followed by about 200 students. On arriving at the physiological department Professor Osler was welcomed in a side room attached to the theatre by Sir Samuel Wilks, the president of the Guy's Hospital Pupils' Physical Society. Everyone was delighted to see Sir Samuel Wilks and he received many congratulations from a large number of his friends. Seats had been reserved for those fortunate enough to have received invitations to dine with the society and directly these guests had taken their places Sir SAMUEL WILKS appeared from the side room and received a prolonged and enthusiastic ovation. After the cheering had died away he addressed the students, speaking clearly and strongly, telling them how rejoiced he was to see them once again, and excusing himself from taking the chair at the meeting of the society he called upon Dr. Taylor to perform that office. Dr. TAYLOR then introduced Professor Osler to the audience. Dr. Taylor was supported in his duties by Dr. W. Hale White, Sir Thomas Stevenson, Mr. W. Arbuthnot Lane, Dr. J. F. Goodhart, Dr. T. G. Stevens, and other members of the Guy's Hospital staff.

Professor OSLER, in commencing his address, claimed from the audience the customary indulgence which was always extended to a bibliomaniac at the hands of his saner brethren. He observed that he had long studied the works of Sir Thomas Browne, and in proof of this he pointed to a large table in front of him which was covered with copies of the works of Sir Thomas Browne. There were editions of the author's writings in Latin, in German, in Dutch, and in French, and amongst the books was a copy of the "Urne Burial" which was stated to have belonged to one of the sons of Sir Thomas Browne. Born in October, 1605, Thomas Browne was educated at Winchester and Oxford and went to Norwich in 1637. He there married and brought up ten children. In connexion with this Professor Osler mentioned that Sir Thomas Browne in early life had expressed himself in a hostile manner concerning women and considered it was unfortunate that some method less mean and trivial had not been found for the perpetuation of the human race. Concerning the publication of the "Religio Medici" Professor Osler mentioned with some slight emphasis that it was given to the world by Browne before he was 30 years old and quoted the author's contention that the magnetic force of a man commenced to fail after 30 years. Commenting on this, Professor Osler remarked that it was a sufficiently serious reflection for certain advanced thinkers who at the present time considered that a man was fit to work up to 40 years. The lecturer was proceeding to say what would happen to the man after that age but was interrupted with loud cheers and laughter. The statement attributed by the Canadian press to the lecturer that men past work should be anæsthetised

out of existence was treated with a considerable amount of sarcasm in the course of the address from time to time by Professor Osler who never failed to draw sympathetic cheers from his audience whenever he alluded to the topic. The address was rendered further interesting by means of pictures thrown on the screen by the aid of a lantern. The many details of Sir Thomas Browne's life, his faithful adherence to the cause of Charles I., and his fame as a linguist all received their due share of attention from Professor Osler and the keenest appreciation was evidenced when the students understood that a complete collection of Sir Thomas Browne's works was presented to the Guy's Hospital Pupils' Physical Society by the lecturer.

A most successful evening was terminated by a hearty vote of thanks to Professor Osler, which was moved by Dr. TAYLOR, seconded by Dr. HALE WHITE, and carried with acclamation.

THE METROPOLITAN ASYLUMS BOARD AND ITS ASSISTANT MEDICAL OFFICERS.

AT the meeting on Oct. 14th of the Metropolitan Asylums Board the Asylums Committee submitted the following report of the special subcommittee appointed on Sept. 11th to inquire into the whole of the circumstances relative to the resignation in August of three assistant medical officers at Darenth Asylum:—

1. In view of the publicity which has been given to the subject-matter of the correspondence which led to our appointment we have decided to deal somewhat fully with it in this report in order that it may be properly understood by every member.

2. The correspondence commenced with a letter addressed on August 14th by Drs. Barwell, Herklots, and Kennard (three assistant medical officers employed at Darenth) "to the chairman and members of the Metropolitan Asylums Board" in which the signatories intimated that they had resigned "as a protest against the general conditions appertaining to our position" and asked "that an inquiry be made into the grounds of our protest." On the receipt of that letter the chairman of the Board directed a reply to be sent to the effect that it would be useless to ask the managers to institute an inquiry concerning a protest couched in such vague terms, but that if the writers of the letter were prepared to state their grievance more specifically he would consider whether it was one which called for inquiry.

3. On August 17th Dr. Barwell in his reply stated "our main grievance is the fact that assistant medical officers in the Metropolitan Asylums Board service are not principal officers," adding "we ask for an inquiry into the grounds for this complaint and are prepared to bring evidence before the managers in support of our grievance."

4. On August 21st another letter was addressed to Dr. Barwell by direction of the chairman of the Board, in which allusion was made to the words "main grievance" and a request made that the chairman might be furnished with a full statement of every other grievance, if any, which Dr. Barwell and his colleagues desired to allege. The letter concluded as follows: "Until Mr. Scovell has this information he cannot be in a position to deal with the matter."

5. To that communication a reply, signed by the three officers, was received on August 24th, from which we quote the following passage: "The point which we wish investigated is the fact that we are not principal officers. This point affects the whole profession and the great majority of our other grievances are bred of the position in which that places us."

6. The next development in this matter was the appearance in THE LANCET and *British Medical Journal* of August 26th of a letter, dated August 22nd, which the officers had addressed to the editors of those journals. The following is a *précis* of the letter as printed in THE LANCET. (*a*) "We have felt it our duty to resign ..... in order to call attention to the difficulties we have met with in the fulfilment of our duties; (*b*) assistant medical officers rank as subordinate officers, while the chaplain, steward, matron, and head schoolmistress are principal officers; (*c*) result is that directions for cure of patients given by an assistant medical officer may be revised by a lay officer of the superior rank, and the assistant medical officer's only remedy is an appeal to the superintendent on every such point. (*d*) This is no merely hypothetical objection, but is in actual experience a difficulty for which the remedy officially provided is obviously inadequate. (*e*) Are prepared to quote instances of matters exclusively medical in which a lay principal officer has modified the directions of an assistant medical officer. (*f*) Such intrusions of unqualified persons ..... are frequent and entail * ..... an almost continuous series of complaints. By the time complaint is made the harm may be done and patient suffer from effect of ignorant interference. (*g*) That the officer may appeal to the superintendent does not, unfortunately, secure the patient from harm. (*h*) Attempts have been made before to remedy this paradoxical state of affairs, but the facts as they are at present demonstrate the completeness of the failure those efforts have met with. (*i*) From the status of assistant medical officers and the accommodation provided for them, the complainants suspect that the Board is not anxious to get assistant medical officers who will stay for any length of time. (*j*) If average stay is not more than a few months interests of patients suffer."

* Upon being questioned on this statement the officer said the word "would" should come before the word "entail." The sentence was accurately copied from the letter as it appeared in THE LANCET.

7. In the same issue of THE LANCET also appeared an advertisement in terms as follow: "The assistant medical officers of the Darenth Asylum under the Metropolitan Asylums Board, who have recently resigned their appointments, and whose vacancies were advertised in THE LANCET of August 19th, request intending candidates to communicate with them under the initials 'B.H.K.' THE LANCET Office 423, Strand, W.C., before deciding to compete for these posts."

8. Upon the published letter being brought to the notice of the chairman of the Board the officers were separately requested, upon his instructions, "to be good enough to furnish for purposes of investigation full details of the instances which you say you are prepared to quote from your own experience in which a lay principal officer has modified your instructions in matters exclusively medical." The assistant clerk's letter concluded as follows: "Mr. Scovell has no doubt that you will at once recognise that the officer or officers accused should in justice be informed with as little delay as possible of so grave a 'charge.'" On the following day (August 29th) the chairman of the Board addressed a letter to the editors of THE LANCET and the *British Medical Journal*, from which letter we quote the following passage: "It is true that assistant medical officers rank as 'subordinate officers' and that the medical superintendent and the other officials named by the writers rank as 'principal officers.' In other words, there is a responsible chief or 'principal officer' in each department of an asylum and each has a number of assistants or 'subordinates.' This is provided by Orders of the Local Government Board and is a matter over which the Asylums Board has no control but, so far as I am aware, the arrangement works well in practice." Mr. Scovell then alluded to the "serious allegation" which the officers had made against some one or more of the lay principal officers, expressed regret that the charge as to the frequent intrusion of unqualified persons into purely medical matters should not have been communicated in the first place to the Board, and stated that he had no doubt whatever the Board would "take the earliest opportunity of thoroughly investigating the matter and of taking such steps as their inquiries may show to be necessary."

9. On August 31st a further letter was received from the officers stating that they were prepared to substantiate their statements which appeared in the *British Medical Journal* and THE LANCET before an impartially constituted tribunal appointed to inquire into the whole case.

10. That communication was succeeded by a further letter (dated Sept. 5th) addressed to the editors of THE LANCET and *British Medical Journal*, stating that the officers thanked Mr. Scovell for his prompt reply to their letter of August 26th and trusted that a "thorough inquiry will place these matters in a true light."

11. At our first meeting on Sept. 13th the three officers appeared before us, a shorthand writer being present whose notes have been transcribed and copies made for perusal by the managers. At the request of the officers they were allowed to be present in the committee room together. Upon being asked to clearly define and particularise cases in which they asserted that the conditions were unsatisfactory to their position, an answer was given which may be summarised as follows: "(*a*) That they were not principal officers but only subordinate officers, which makes it difficult to uphold our authority; (*b*) that orders antagonistic to theirs were given by lay principal officers; (*c*) that there was a possibility of the lay principal officers ignoring their orders in matters which occurred in their (the assistant medical officers') provinces; (*d*) that the quarters for assistant medical officers, as such, were inferior to those which would be allotted to a principal officer; and (*e*) that their accommodation also as subordinate officers was inferior." They also complained that they could be dismissed without the consent of the Local Government Board and that after three years' service an assistant medical officer had to be re-elected annually, which made the position very insecure; and, lastly, that they considered it inconsistent with the dignity of the medical profession to be subordinate officers and to be classed as such, in accordance with a Local Government Board Order (Feb. 10th, 1875, Art. 30), with the dispenser, stocktaker, attendant, and porter.

12. Upon being asked to quote instances of matters exclusively medical in which a lay principal officer had modified the instructions of an assistant medical officer, a reply was made that "we do not make a charge against any individual nor do we wish to do so," and "we merely mention this to show that the rule which makes us subordinate officers does not work satisfactorily; therefore, we wish not to mention any names at all."

13. Upon being informed that they could not bring charges without substantiating them, the officers replied that they had not brought any charge at all, and that it was not their intention to bring a charge against any individual but "merely to point out the difficulty of our position." Urged to quote instances to prove that the system was wrong, three instances were mentioned. The *first* was said to have occurred in November last when some nightshirts (afterwards referred to as "clean linen") appear to have been removed from a ward contrary to an order of an assistant medical officer. The *second* instance had reference to some cripple patients being sent out into the airing court for exercise by a lay principal officer without consultation with the medical officer in charge and strictly against the orders of an assistant medical officer. The witness refused to give the name of the lay officer referred to. The *third* instance related to the alleged removal "by order of the lay principal officer" of a blanket from each of two beds occupied by patients suffering from bronchitis after orders had been given that the patients were to have a certain number of blankets on. The witness was again and again urged to give the name of the lay principal officer but he declined to give it, stating, "I do not know whether the lay officer knew of my instruction." These were the only instances mentioned in which the welfare of the patients might possibly be endangered.

14. Here it will be convenient to mention that a transcript of the shorthand notes taken at the meeting has been forwarded to the medical superintendent of Darenth Asylum (Dr. Rotherham) by our direction with a request to furnish his observations thereon. His observations upon the three instances above mentioned are as follows: "(1) *Complaint as to clothing being removed.*—The assistant medical officer reported to me that an order had been given by a 'lay' principal officer for clothing to be removed from Ward 13, though he had instructed the charge-nurse that no clothing was to be removed. I told him to see the charge-nurse and to tell her that his order was to be obeyed and that if after this any contrary order was given he was to report to me. I heard nothing more of this and had no idea that any clothing had been removed. I therefore assumed that the 'lay' principal officer did not

know the assistant medical officer's order and that if the nurse had explained this the order to remove the clothes would not have been given. (2) *With regard to the cripples* being taken out of the ward against the assistant medical officer's order, this is the first I have heard of this and do not understand who the 'lay' principal officer can be, as the only male principal officers at Darenth are the steward, chaplain, and myself. (The 'lay' officer was alluded to as 'he.') (3) *With regard to the removal of blankets.*—This was reported to me by the assistant medical officer and I told him to give an order for the blankets to be put on again and to explain to the charge-nurse that this was a special order and to let me know if any contradictory order was given. I heard nothing more of this and therefore assumed that the 'lay' principal officer had no knowledge of the assistant medical officer's order."

15. It will perhaps be convenient if we here give the observations of Dr. Rotherham upon the three remaining complaints made in the course of the meeting: "(4) *Complaint as to there being no common room.*—Assistant medical officers during the past year have used as a common mess-room the committee dining room, except at such times as the committee are visiting the institution. (5) *Complaint about the assistant medical officers' quarters.*—The assistant medical officers' room at the pavilions, to which Dr. Kennard apparently refers and which he occupied for the first part of his time at Darenth, looks out on a private garden and not on to an airing court. The room (quarters) consists of a sitting-room, bedroom, bed and bathroom combined, and the usual offices, and I have had no complaint about them except that they are situated at the pavilions. (6) *Complaint with regard to butter and beer.*—I have had complaints from time to time about the butter supplied and have looked into the matter but I have had no complaints about the beer supplied."

16. We now proceed to state the conclusions at which we have arrived on the complaints generally and on the "evidence" adduced by the complainants.

17. We regard such "instances" as have been mentioned as altogether too trivial to be made the occasion of such sweeping assertions against other officers as were contained in the letter to THE LANCET and the *British Medical Journal*—assertions the truth of which it is impossible to satisfactorily inquire into owing to the refusal of the authors to furnish the names of those whom they have accused.

18. The point as to assistant medical officers being ranked as subordinate officers and not principal officers is one which has been determined by the Local Government Board, doubtless for good and sufficient reasons, and the principle is not, we believe, restricted to service under the Metropolitan Asylums Board. While technically ranking as subordinates, assistant medical officers are treated as principal officers in such matters as their dietary, the privilege of receiving and entertaining friends, and in several other ways.

19. With regard to the complaint as to the possibility of a medical order being disregarded or revised we consider that, even if assistant medical officers were elevated to the rank of principal officers, that would be no guarantee that such instances as have been furnished could never happen. Of those instances it seems to us that the first and third were of a domestic character, and that if the unnamed lay officer alluded to had known of the medical officer's wishes no contradictory orders would have been given. As regards the second instance, it seems that the medical officer gave orders that when the crippled patients referred to were sufficiently well certain of them could go outside and take exercise in the airing court but that as the weather turned wet and cold he ordered that they should not go out. In this case we can only suppose that the lay officer who sent the patients out knew of the first order but not of the second. The refusal of the complainants to furnish the name of the officer prevents further inquiry being made. Of this instance—the only serious one in our view—the medical superintendent was not made aware.

20. The complaints concerning the accommodation provided for the assistant medical officers have been inquired into by our chairman and the chairman of the Darenth sub-committee who have personally inspected the quarters and who tell us that they are quite satisfactory and that the officers who are now occupying them are satisfied. The quarters provided are as follows: For the senior assistant medical officer, A sitting-room, two bedrooms, and a bathroom. For the second and fourth assistants, located at the training school. Each a sitting-room and a bedroom, a bathroom for their joint use, with a bed in it which is available for an occasional visitor. For the third assistant, located at the pavilions, a sitting-room, a bedroom, and a bathroom with a bed in it. The officers are also allowed to use the subcommittee's luncheon-room as a common mess-room and are provided with a billiard-room.

21. The complaint that assistant medical officers can be dismissed without the consent of the Local Government Board seems to us to require very little comment. If the officers had cited one instance where such a power on the part of the managers had been wrongfully used it is conceivable that there would have been some justification for the complaint.

22. With regard to the rule (Standing Order, 124) which requires that "every assistant medical officer appointed to the Board's imbecile asylums ..... shall be subject to annual re-election after the completion of his third year of office," we can only say that it has been in operation for nearly 12 years and was made on the recommendation of the General Purposes Committee. So far as we are aware, no hardship has been occasioned by the rule, which we believe was passed with a view to discouraging the stay in imbecile asylums for long periods of young medical men who, it was thought, would do well to seek occupation on a higher plane after obtaining a few years' experience of asylum work.

23. Concerning the complaint of the officers that they considered it "inconsistent with the dignity of the medical profession to be subordinate officers" we fail to see any justification for the suggestion.

24. Generally we cannot refrain from expressing our regret that the complainants should have adopted the precipitate course they took for the purpose of calling attention to their grievances and we consider that they treated the managers and the medical superintendent, who was on leave at the time, most unfairly in making such grievances public before giving the asylums committee or the Board a chance of investigating them.

25. We consider that this report would be incomplete without containing a brief statement respecting the time the complainants were in the Board's service. Mr. Barwell was first employed temporarily at Darenth in 1900. In September of that year he was appointed as fourth assistant and was subsequently promoted, first as third assistant and later on as second assistant, leaving in March, 1902, to go to South Africa. In May, 1904, he was again employed temporarily at Darenth and in the following June was appointed third assistant, being promoted in June of this year to be a second assistant. Mr. Herklots was employed for the first five and a half months of this year as a *locum tenens* assistant medical officer at Darenth, and in response to public advertisement he applied for permanent appointment as a third assistant and was appointed on June 19th last. Dr. Kennard was appointed fourth assistant on June 19th last. He entered the service at Darenth on July 10th and gave notice of resignation after three weeks' service.

28. In conclusion, we submit the following recommendations: That the views expressed by the special subcommittee in this report be adopted as those of the Asylums Committee. That the report be submitted to the Board, with an intimation that the Asylums Committee have adopted the views expressed by the subcommittee therein.

Mr. R. STRONG, chairman of the subcommittee, and also chairman of the Asylums Committee, stated that the latter body had adopted the report and recommendations of the subcommittee. He now moved "that a copy of the report be sent to the Local Government Board, the secretaries of the several metropolitan medical schools, and to the editors of THE LANCET and the *British Medical Journal*." As was pointed out, the resignations of the three officers came at a very awkward time during the recess, but the necessary measures for dealing with the situation were taken with the least possible delay. In his opinion the action of the officers in making the protest in the public manner in which it had been done had been wrong in view of the admitted fact that they had not before resigning made any complaint to the Board or to the committee as to the matters to which they took exception. It was not as if these were young men just from college or the medical schools. Mr. Barwell had been in the service of the Board at intervals since 1900 and had been so well satisfied with his treatment that after leaving for a time he had come back again. He had years of experience of the alleged intolerable conditions. Mr. Strong read copious extracts from the report and went on to say that the three assistant medical officers besides inserting the advertisement (quoted in the report) in THE LANCET sent round a circular to the medical schools couched in similar terms. The Board had been in the practice of forwarding notifications of vacancies to the medical schools and this circular with the advertisement in THE LANCET was clearly with the object of preventing applicants for the positions from coming forward. The great point of the assistant medical officers was that they were not classed as principal officers. But it was not this Board but the Local Government Board which was responsible for this and although the assistant medical officers were classified as subordinate officers they were always treated as principal officers and as gentlemen. In conclusion, the speaker said that he submitted the report of the subcommittee and his motion thereon to the Board with the fullest confidence.

There was no discussion upon the main question but an amendment was moved that the report should not be sent to THE LANCET and the *British Medical Journal*. It was argued that if the papers named wanted the information they should send reporters to the meeting. It was explained that THE LANCET had a special representative present.

The amendment was lost and the original motion was carried.

The Asylums Committee reported the appointment of Mr. C. H. Wood, M.R.C.S. Eng., L.R.C.P. Lond., aged 31 years, and Mr. E. C. Jennings, L.R.C.S.I., L.R.C.P.I., aged 27 years, as assistant medical officers. These gentlemen will fill the vacancies for a second and third assistant respectively at Darenth Asylum.

ASYLUM REPORTS.

Report of the Inspector of Lunatic Asylums of Victoria (Australia) for 1904.—From this report it appears that the total number of registered insane on Dec. 31st, 1904, was 4642, being an increase of 72 for the year. Of these, 34 were boarded out with guardians. The admissions during 1904 numbered 737. Of these, 114 had had previous attacks—one or more. The public asylums are seven in number; the numbers resident in these at the close of the year varied from 305 to 815, but in only one was the number less than 500. The percentage of recoveries on admissions for 1904 was 37·03, the average percentage for the past 15 years being 37·65. These figures agree closely with the average percentage for English county and borough

asylums for the past ten years, which is 37·27. The percentage of deaths on the average number resident was 7·58 for 1904, the average for the past 15 years being 8·03, which may be compared with the average for the past ten years at the English asylums—namely, 10·11. The bearing of length of residence, which is in most cases of curable insanity practically equivalent to duration of disorder, on the prospects of recovery is brought out in a table which shows that of 277 patients discharged recovered in 1904 212 had been resident for periods varying from one to 12 months, of whom 180 had been resident from one to nine months, and after a period of six months there is a marked and progressive fall in the number of recoveries. The net average weekly cost of patients in the asylums was 9*s.* 7*d.* for 1904 as compared with 10*s.* 1½*d.* in English county asylums for the year ending March, 1904. As regards ratio of insanity to population, there was at the close of last year one person registered insane in every 260, as compared with 1 to 285 in England and Wales. The report records with satisfaction that the asylums "have been worked practically on the non-restraint system" during the year—a statement the satisfactory nature of which cannot be adequately appreciated unless controlled by information as to the amount of sedative medicine used during the period in question, but this is not forthcoming. Female nurses are employed in male wards and it will be interesting to those who strongly advocate this system at home to learn that the method gives satisfaction and its extension is suggested. Overcrowding is on the increase at the various asylums of Victoria and these institutions are described as "not up to as high a standard as those of more favoured countries." There is reason, however, to hope that the new Lunacy Act will enable improvements to be carried out in the near future.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on Oct. 12th, Mr. JOHN TWEEDY, the President, being in the chair.

The SECRETARY reported the death on August 8th of Mr. Christopher Heath, past President of the College and past member of the Council and of the Court of Examiners, and stated that the College was represented at the funeral by the President.

The Council carried the following motion :—

The Council hereby express their deep regret at the death of Mr. Christopher Heath, past President of the College, and tender to Mrs. Heath and the members of his family their sincere sympathy in the loss which they have sustained. The Council do also record their appreciation of the many services rendered by Mr. Heath to the College in the conscientious discharge of the several duties which devolved upon him as President, member of the Council, and examiner.

A report was received from the Museum Committee that Lieutenant-Colonel Havelock H. R. Charles, I.M.S., had presented to the College his collection of 248 skulls, 16 skeletons, and other specimens representative of many of the castes and tribes of India and other parts of Asia. The report also explained that the collection was especially valuable as the collector had been able to identify the majority of the skulls as belonging to certain individuals known before death.

The best thanks of the Council were given to Lieutenant-Colonel Havelock Charles for his valuable gift to the College.

It was resolved that the loan of museum specimens to the Army Medical Department should be renewed for another year.

The draft copy of the annual report of the Council was approved for presentation to the Fellows and Members at the annual meeting on Thursday, Nov. 16th.

Mr. Arthur S. Underwood was re-elected a member of the Board of Examiners in Dental Surgery and Mr. Edmund Owen was re-elected a member of the Committee of Management.

A report was received from the Court of Examiners relating to the conditions of admission to the first Fellowship examination. It was referred to a committee for consideration.

A report was received from the visitors appointed by the Royal Colleges of Physicians of London and Surgeons of England to report on the courses of study and examinations in Tropical Medicine. The report was received and it was decided to request the Royal College of Physicians to appoint delegates to meet delegates of this College to hold a conference on the report.

A vote of thanks was received from the Royal College of Surgeons of Edinburgh for the congratulatory address from this College on the celebration of the fourth centenary of the Edinburgh College.

Mr. Owen and Professor Howard Marsh were appointed to represent the College at the unveiling of the memorial to Sir Thomas Browne at Norwich.

THE ROYAL DENTAL HOSPITAL OF LONDON:

ADDRESS BY PROFESSOR OSLER.

A CONVERSAZIONE was held on Oct. 13th in the galleries of the Royal Institute of Painters, Piccadilly, on the occasion of the distribution of prizes to the students of the Royal Dental Hospital of London. The proceedings were opened by the dean of the school, Mr. J. F. COLYER, who in the course of his speech said that the progress of the school during the past year had been satisfactory, with one exception—namely, the entry of new students. This year 33 new students had entered as against 36 in the previous year. The falling off had been anticipated from the small number of men who had registered at the General Medical Council during recent years, especially in 1902, which year affected them most. The decrease in the number of students entering dental surgery was a serious matter when the growing demand of the public for dental aid was considered. The results of the pass lists were excellent and were a sufficient proof that a high standard of education was maintained in the school. Mr. Colyer then referred to the various changes which had taken place in the staff and afterwards gave an account of the prizes. The entrance scholarship was awarded to Mr. W. D. Frew. Ash's prize for some subject connected with dental surgery was awarded to Mr. J. G. Atkinson Fairbank. The two prizes offered by Mr. Richard Winch to a past and a present student for the best essays on the prevention of dental caries were awarded to Mr. F. Butler and Mr. A. E. Ironside respectively. The Robert Woodhouse prize in practical dental surgery was awarded to Mr. F. R. Smyth.

Professor W. OSLER at the request of the dean then distributed the prizes.

In the course of an address which he afterwards delivered to the students, he impressed upon them the necessity for remembering that the traditions of their art and science in England were distinctly scientific. They should read John Hunter's book on the teeth and everything else which he wrote. It was true that they were specialists but they must beware of becoming narrow specialists. They would have plenty of spare time, at all events early in their career, and they should read some such subject as anatomy, comparative anatomy, embryology, or bacteriology. With regard to their patients they stood in a threefold relationship. First, they had to relieve suffering. Secondly, they had to increase the digestive capacity of the public, and this relationship was most important. The public might be divided into two groups, poltophagists, or bolters, and psomophagists, or chewers. Their duty was to convert the enormous percentage of bolters into chewers. They might think it an easy task but it was not so, although it would be perhaps easier in this country than in the one where he had been living lately. The third relationship in which they stood towards their patients was as preservers of beauty. Next they had to consider their duty to the public and that duty was to preach the gospel of cleanliness—cleanliness of the mouth, of the teeth, and of the throat. They must educate the public and, moreover, they could prevent early decay in the teeth. Professor Osler here commended to his audience the writings by Dr. William Hunter on oral sepsis. All children should be taught to clean their teeth. All school children should have their mouths and teeth inspected and, continued Professor Osler, "connected with every board school there should be a dental surgeon with a large salary and he should make a routine inspection of those children and report upon them, and if their teeth were bad or dirty they should be told not to come to school until

their teeth were attended to. The child with bad teeth is a danger in a school and the teeth should be attended to and the country should pay for it."

At the conclusion of the address a vote of thanks was carried by acclamation to Professor Osler who made a short reply.

During the evening a selection of music was played by the Prince's Hall Band, Mr. Percy French gave some humorous sketches, and several demonstrations, including one on various colour-photography processes, were given by Mr. R. Kerr. Mr. A. Hopewell-Smith exhibited sundry microscopic specimens and Messrs. Baird and Tatlock showed various crystals and special apparatus and gave an exhibition of glass-blowing.

MEDICAL SCHOOL DINNERS.

St. Bartholomew's Hospital.—The dinner of the old students of St. Bartholomew's Hospital was held in the great hall of the hospital on Oct. 2nd, Mr. Anthony A. Bowlby, C.M G., being in the chair. The guest of the evening was Lord Ludlow, treasurer of the hospital. Previously to the dinner there was a large gathering of students and of old St. Bartholomew's men in the library for afternoon tea. The interest shown in the new out-patient and special departments block, which is now being erected, was great. From the library window a bird's-eye view of the new ground and the building rising on it was obtained and the plans were fully demonstrated. The cost of this block will be £120 000 and it is gratifying to know that nearly the whole amount is now in hand. Plans for the next block to be built—the pathological block—were also viewed. The cost of this block will be £20,000, towards which some £2000 are already in hand.

St. George's Hospital.—The annual dinner of past and present students took place at the Whitehall Rooms of the Hotel Métropole on Oct. 2nd under the presidency of Mr. William West, treasurer to the hospital, and was extremely well attended. Naturally, the innovation which the school of St. George's Hospital is making this session in sending students for their preliminary instruction away from Hyde Park Corner to the University of London came in for special notice. The generous gifts of members of the school to aid in the firm establishment of the new régime and to assure the position of St. George's Hospital as a first-rate place of clinical instruction and research were recounted in the speech by the treasurer of the school, Dr. Arthur C. Latham, whose remarks were well calculated to stir the patriotic support of every hearer.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8002 births and 4092 deaths were registered during the week ending Oct. 14th. The annual rate of mortality in these towns, which had been 13·8, 14·0, and 13·5 per 1000 in the three preceding weeks, rose again to 13·7 per 1000 last week. In London the death-rate was 14·0 per 1000, while it averaged 13·5 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·0 in Wallasey, 5·9 in Handsworth (Staffs.), 6·2 in Hornsey, 6·8 in Wolverhampton, 6·9 in Grimsby, 7·2 in Walthamstow, 7·6 in Tottenham, and 8·0 in East Ham; the highest rates were 19·0 in Gateshead, 19·7 in Norwich, 19·8 in Huddersfield, 19·9 in Burton-on-Trent, 21·6 in Bootle, 21·9 in Great Yarmouth, 22·3 in Wigan, 23·1 in Bury, and 24·9 in Middlesbrough. The 4092 deaths in these towns last week included 376 which were referred to the principal infectious diseases, against 655, 588, and 446 in the three preceding weeks; of these 376 deaths, 180 resulted from diarrhœa, 46 from diphtheria, 43 from scarlet fever, 38 from "fever" (principally enteric), 35 from whooping-cough, and 34 from measles, but not any from small-pox. In Tottenham, Devonport, Wolverhampton, Coventry, Rochdale, York, Cardiff, and in nine other smaller towns no death from any of the principal infectious diseases was registered, while they caused the highest death-rates in Southampton, Northampton, Norwich, Wigan, Warrington, Blackburn, and Preston. The greatest proportional mortality from measles was recorded in Willesden; from scarlet fever in Blackburn; from diphtheria in Southampton and Middlesbrough; from whooping-cough in Warrington; and from diarrhœa in Norwich, Walsall, Wigan, Warrington, Preston, Sheffield, and Hull. The mortality from "fever" showed no marked excess in any of the large towns. No death from small-pox was registered last week in any of the 76 towns and no case of small-pox was under treatment last week in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday, Oct. 14th, was 3954, against 3424, 3591, and 3789 on the three preceding Saturdays; 511 new cases were admitted during the week, against 546, 509, and 527 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory organs, which had been 130, 155, and 152 in the three preceding weeks, rose again last week to 191 but were three below the average number in the corresponding period of the preceding year. The causes of 41, or 1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Salford, Leeds, Hull, Newcastle-on-Tyne, and in 49 other smaller towns; while the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Manchester, Blackburn, Barrow-in-Furness, Bradford, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 13·5, 14·5, and 14·9 per 1000 in the three preceding weeks, further rose to 16·3 per 1000 during the week ending Oct. 14th, and was 2·6 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·7 in Perth and 14·1 in Leith to 17·1 in Edinburgh and in Paisley and 18·6 in Greenock. The 547 deaths in these towns included 23 which were referred to diarrhœa, ten to measles, eight to diphtheria, eight to whooping-cough, five to "fever," and one to scarlet fever. In all 55 deaths resulted from these principal infectious diseases last week, against 59, 56, and 58 in the three preceding weeks. These 55 deaths were equal to an annual rate of 1·6 per 1000, which was 0·3 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 38, 36, and 37 in the three preceding weeks, declined again last week to 23, of which 13 occurred in Glasgow, five in Edinburgh, and three in Aberdeen. The deaths from measles, which had been seven in each of the two preceding weeks, rose to ten last week and included eight in Glasgow and two in Dundee. The fatal cases of diphtheria, which had been three, six, and three in the three preceding weeks, increased again last week to eight, of which two were registered in Glasgow and two in Edinburgh. The deaths from whooping-cough, which had been four in each of the two preceding weeks, rose last week to eight, and included four in Glasgow and two in Edinburgh. The 5 fatal cases of "fever" corresponded with the number in the preceding week and included two in Paisley. The deaths referred to diseases of the respiratory organs in these towns, which had been 58, 77, and 65 in the three preceding weeks, rose again last week to 106, and were 30 in excess of the number in the corresponding period of last year. The causes of 22, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·9, 22·3, and 19·8 per 1000 in the three preceding weeks, further declined to 18·3 per 1000 during the week ending Oct. 14th. During the past four weeks the death-rate has averaged 19·6 per 1000, the rates during the same period being 13·6 in London and 14·6 in Edinburgh. The 133 deaths of persons belonging to Dublin registered during the week under notice were 11 below the number in the preceding week, and included five which were referred to the principal infectious diseases, against 13, 12, and three in the three preceding weeks; of these, four resulted from

diarrhœa and one from "fever," but not any from small-pox, measles, scarlet fever, diphtheria, or whooping-cough. These five deaths were equal to an annual rate of 0·7 per 1000, the death-rates last week from the principal infectious diseases being 1·2 in London and 1·4 in Edinburgh. The fatal cases of diarrhœa, which had been 10, nine, and one in the three preceding weeks, rose again last week to four. The deaths from "fever," which had been two, three, and two in the three preceding weeks, declined to one last week. The 133 deaths in Dublin last week included 22 of children under one year of age and 39 of persons aged 60 years and upwards; the deaths of infants showed a considerable decline but those of elderly persons were slightly in excess of the numbers recorded in the preceding week. Four inquest cases and four deaths from violence were registered; and 50, or more than a third, of the deaths occurred in public institutions. The causes of three, or more than 2 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon C. W. Buchanan-Hamilton to the *Wildfire* for Sheerness Yard. Surgeons: F. E. Bolton to the *Victory*, additional, for disposal; P. T. Sutcliffe to the *Vivid*; S. S. H. Shannon to the *Pembroke*; L. C. Robinson, to the *Victory*, additional; and A. Hooper to the *Devonshire*.

ROYAL ARMY MEDICAL CORPS.

Captain R. J. Blackham assumes medical charge of the Military Hospital, Devonport, officers and their families, soldiers' families, and civil subordinates of H.M. Gunwharf, vice Lieutenant-Colonel G. Cree, who is about to proceed to India.

Captain James E. Carter, from half-pay, to be Captain, with precedence next above Captain H. V. Prynne (dated Oct. 2nd, 1905).

ROYAL ARMY MEDICAL CORPS (MILITIA).

Irish Command: No. 2 Dublin Company: Lieutenant (Honorary Lieutenant in the Army) C. R. Tichborne to be Captain (dated June 18th, 1905).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Carnarvonshire: Surgeon-Lieutenant-Colonel E. J. Lloyd is granted the honorary rank of Surgeon-Colonel (dated Oct. 14th, 1905). 4th Durham: Surgeon-Captain J. S. Milne resigns his commission (dated Oct. 18th, 1905). 1st City of London: Surgeon-Lieutenant G. Johnston resigns his commission (dated Sept. 25th, 1905).

Rifle: 1st (Exeter and South Devon) Volunteer Battalion the Devonshire Regiment: The announcement of the absorption into the Establishment of Supernumerary Surgeon-Captain R. Pickard, which appeared in the *London Gazette* of August 18th, 1905, is cancelled. 3rd (City of) London Volunteer Rifle Corps: Surgeon-Captain G. W. O'F. Clark resigns his commission (dated Oct. 2nd, 1905). 1st Cadet Battalion the King's (Liverpool Regiment): Abraham Ellenbogen to be Surgeon-Lieutenant (dated Oct. 18th, 1905). 1st Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Lieutenant-Colonel F. K. Pigott is granted the honorary rank of Surgeon-Colonel (dated Oct. 18th, 1905).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Eastern Command: Woolwich Companies: Lieutenant M. W. Renton resigns his commission (dated Oct. 18th, 1905).

Scottish Command: Glasgow Companies: Lieutenant-Colonel G. T. Beatson, C.B., is granted the honorary rank of Colonel (dated Oct. 14th, 1905).

DEATHS IN THE SERVICES.

Lieutenant-Colonel Maurice Henry Smith, retired pay, late Indian Medical Service, on Oct 12th, aged 55 years. He joined the service as surgeon in 1876, was promoted to surgeon-lieutenant-colonel in 1896, and retired in the same year. He served in the Burma Expedition, 1885–87 (medal with clasp), and on the North-West Frontier in the Chin-Lushai Expedition, 1889–90 (clasp).

THE ACCOMMODATION FOR ARMY NURSES AT THE NEW MILITARY HOSPITAL.

The alleged disregard of the wishes of Her Majesty the Queen with reference to the accommodation for nurses at the new Military Hospital at Millbank has been the subject of some comment in the press. Until an authoritative statement is made on the matter more harm than good is likely to result from premature criticism in the daily press. Whatever the truth may be, we are confident that both the King and the Queen, who devote such a large proportion of their time to hospital matters, will use their influence to obtain for the army nurses the accommodation which is necessary both for their health and comfort without extravagant expenditure on unnecessary luxuries.

THE COMPETITIVE EXAMINATIONS FOR THE ARMY MEDICAL SERVICES.

We have received a communication relative to the working of the systems of competitive examination for the Royal Army Medical Corps and the Indian Medical Service respectively, which our correspondent thinks susceptible of a desirable modification with a view to the prevention of several candidates being lost to the medical services of the army. He points out that the Indian Medical Service has usually between 40 and 50 candidates contending for 14 places, with the result that some 36 fail to obtain places in that service notwithstanding that they may have attained a high standard. On the other hand, the number of candidates entering for the Royal Army Medical Service is less and the competition for places may be much reduced by the time these candidates have been sifted by the Advisory Board. Our correspondent asks why should not some of those who have failed to obtain places in the Indian Medical Service have the opportunity of competing for the Royal Army Medical Corps instead of having to wait six months or more in preparing for the Indian Medical Service? At the end of that time they are often perplexed to know which of the two services they should compete for or possibly, being unable to afford to wait any longer, they relinquish the idea of going in for either and are consequently lost to the services altogether. As the examinations for the two medical services are distinct and have no necessary relation to one another—the top men in the Indian Medical Service need not be the best men in surgery and medicine, which are the two principal subjects of examination for the Royal Army Medical Corps—our correspondent contends that there is nothing lowering to the reputation and dignity of the Royal Army Medical Corps in allowing the rejected candidates of the Indian Medical Service, who have possibly only failed by not scoring the requisite number of marks in some of the minor subjects of examination, to compete for places in the other medical service.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

This journal sustains the position which it has created for itself on account of the scientific and interesting nature of its contents. It is very successfully edited by Colonel David Bruce, R.A.M.C., C.B., F.R.S. The number for October contains many valuable reports and papers, such as those connected with the commission appointed by the Admiralty, the War Office, and the Civil Government of Malta for the investigation of Mediterranean fever under the supervision of an advisory committee of the Royal Society. The reports connected herewith are contributions from Staff-Surgeon R. T. Gilmour, R.N., Dr. T. Zammit, and Staff-Surgeon E. A. Shaw, R.N., and they succeed in telling us all that is at present known about the micrococcus Melitensis. There is also a summary of report No. VI. of the Sleeping Sickness Commission of the Royal Society by Captain E. D. W. Greig, I.M.S., together with articles on Enteric Fever at Pietermaritzburg, Ambulance Work in Hill Warfare, and others of a clinical character in regard to cases of medical and surgical interest. The vigorously written "Personal Recollections of the Afghan Campaigns of 1878–79–80," reprinted from the *Journal of the United Service Institution of India*, come to an end.

DISPERSING THE RED CROSS FORCES IN MANCHURIA.

In all the establishments of the Red Cross Society at the theatre of the war with Japan and throughout the whole of that war about 500 medical men and 4000 sisters of mercy have been engaged. According to the *Novoe Vremya* these are now being dispersed gradually. The members are obtaining settlement of their claims in Kharbin where they are granted the necessary documents to frank them on to European Russia.

Correspondence.

"Audi alteram partem."

THE PUBLIC BATHS IN TURKEY.

To the Editors of THE LANCET.

SIRS,—Allow me to offer a few remarks in reply to your Constantinople correspondent who stated in THE LANCET of Oct. 7th, p. 1072, that "one of the greatest and most dangerous sources of dissemination of infectious diseases in Turkey are the public baths."

It is well known that many baths were closed in the fourteenth and fifteenth centuries on account of questions connected with public morality and on account of the spread of syphilis, which in many instances was mistakenly considered to be leprosy, but in the methods of their conveyance there is a great difference between syphilis and other infectious diseases, and I consider that there is not the least foundation for the assertion that "the baths are very often the cause of the spreading of most loathsome skin diseases." I lived in Turkey for about 30 years, during which time I had a very good practice and attended a great number of patients belonging to all classes of the population without distinction of nationality or religion. As the result of this experience I can state positively that I have never seen any patient whose illness was contracted in the "hamam." Your correspondent writes that "all bathe in one room and frequently use hot or cold water from the same basin." To this I would reply, first, that the large hall of the "hamam" cannot be very well described as a "room," and secondly, that in the Turkish baths or "hamams," which are the modern representatives of the Greek or Roman (or more properly the Byzantine) baths, persons wash themselves under running water and not in the tub or receptacle filled with water which the French call *baignoir* and the Germans call *Wannenbad*. All round this large hall, which the Germans would call *Lichthall*, there are little reservoirs about three feet from the floor and four or five feet apart. Over each reservoir there are two water taps, one for cold and one for hot water, from which the bather takes with a vessel called by the Turks a "tass" as much water as he likes of any desired temperature and throws it over himself and the water immediately runs away without causing any danger of spreading any disease from which the bather may suffer.

I am, Sirs, yours faithfully,

Corfu, Greece, Oct. 12th, 1905. S. C. ZAVITZIANOS, M.D.

VARICOCELE—WHAT OF IT?

To the Editors of THE LANCET.

SIRS,—I should like to add my testimony to that of Mr. L. McGavin. I have had a varicocele of considerable size since I was 15 years of age, but beyond a sense of weight and aching in hot weather and after prolonged fatigue I have suffered no inconvenience. It was my good fortune to be one of Sir James Paget's dressers and to hear his lecture on Sexual Hypochondriasis in which he said: "Varicocele is troublesome because of the sense of weight and aching which sometimes, though far from always, attends it and which is sometimes much increased by long standing or walking. In some cases, too, the dilated veins, like varicose veins in the leg, are apt to become inflamed or very sensitive. But this, I believe, is the widest limit of the harm that varicocele ever does. I do not believe that it ever produced wasting of a testicle or impotence or any such thing." This lecture was a great relief to my mind and I have never consulted anyone on my own account. I have worn Wormald's rings and suspensory bandages but have discarded both for many years and trust to my cold bath every morning instead. In my student days I have ridden from morning to night with the Oakley, Pytchley, and Duke of Grafton's hounds, and since then have had most arduous and incessant night and day work in a country practice with only an occasional feeling of weight caused by the varicocele. I think that Mr. Harrison Cripps deserves the thanks of the public, as well as of the medical profession, for the stand he has taken in this matter. I inclose my card.

I am, Sirs, yours faithfully,

Oct. 16th, 1905. M.D., F.R.C.S.

To the Editors of THE LANCET.

SIRS,—I have read with great interest the correspondence in your valued paper on varicocele. I have myself had a very large varicocele on the left side since I was 16 years of age and that is 26 years ago. I have never suffered the slightest inconvenience from it. I have been an all-round athlete, walking at times over 50 miles in a day and cycling for nearly 24 hours at a stretch; I have played Rugby football as forward for 23 consecutive seasons; I have been able to lift 112 pounds over my head with one hand; I have also played cricket, tennis, and other games vigorously. At the same time I have worked exceptionally hard in my profession. You can imagine it has gone against the grain with me to reject recruits for varicocele or to send them to be operated on.

I may add that I have never seen any man suffering with varicocele who felt any inconvenience from it. If there is any pain accompanying a varicocele it is neuralgic and seldom occurs unless the patient's attention has been drawn to his condition. There is no wasting of the testicle in my case; I possess full virile power and am the father of a family.

I am, Sirs, yours faithfully,

Oct. 17th, 1905. M.R.C.S., &c.

To the Editors of THE LANCET.

SIRS,—When a boy of nine, when standing on the top rail of a fence to view the first railway train in my world, I slipped and fell astride it, developing a big varicocele. Since then I have been for years a globe-trotter, often in the saddle for long periods and in hard conditions in the tropics and out of them. In my body I have three united fractures and many scars of wounds and injuries. I am now 52 years of age, have never worn a suspender, and except that the goutiness which plays lightly on my frame now and then transfers a suggestion of neuralgic pain thither when in the spring and fall it elects to forsake the muscles of my back, I am as fit as I ought to be at my age. It is true I would have preferred to have been, like the Turk, unblemished, and it is possible that I may in life have suffered inconveniences from its presence which I might otherwise have avoided. I do not know if I have, but this I am certain of, that the upshot of my exceedingly active life so far shows that there never has been in my case any justification for operation.

I am, Sirs, yours faithfully,

Oct. 14th, 1905. ZUFRIEDEN.

THE ESSENTIAL CONDITIONS OF STEAM DISINFECTION.

To the Editors of THE LANCET.

SIRS,—Dr. J. C. Thresh complains in general that my "conclusions are based too exclusively upon theoretical considerations and laboratory experiments" which "are of little importance compared with the results of experiments made with actual disinfecting machines," which he describes as "practical tests," and in particular that I ignore, overlook, and admit various propositions which he states. On these and other grounds, to which I will refer, he concludes that current steam at atmospheric pressure is a trustworthy steriliser of all infections.

Dr. Thresh's "practical tests" appear to have consisted in the exposure of bacteria in a disinfecting machine and, as I presume, their subsequent inoculation into a suitable culture medium and incubation at blood heat. This is the process which was invariably adopted in the "laboratory experiments" which I have quoted, with the exception that in them the maintenance of steam temperature and velocity may sometimes have been more accurately controlled and that occasionally the bacteria (as in the experiments of Professor Grancher and Dr. Ledoux-Labard) were inoculated into animals. Some of them were made in "actual disinfecting machines" of well-known design. In other words, the "laboratory experiments" which are too theoretical for Dr. Thresh's taste are substantially the same as the "practical tests" on which he prefers to rely, except to such extent as they give a better chance to the process under examination and in some cases a

fuller assurance that real sterilisation (and not merely retardation of growth) had occurred. The presence of laboratory precautions against the risks of interference through the accidents of practice only strengthened the inference that current steam at atmospheric pressure, which failed in such conditions, might fail in the less favourable conditions of actual practice.

Taking Dr. Thresh's individual objections I can only deny the truth of those statements which I am said to acknowledge, and either the accuracy or the relevance of those which I am said to have ignored or overlooked. Dr. Thresh alleges that in my "theoretical considerations" I ignore what he describes as the fact that "the total quantity of heat necessary to evaporate water at 100° C. is 637°, and at 120° C. 643°. The use of high pressure necessary to evaporate water at 120° C. only therefore increases the sensible heat produced by condensation by 6° C., an amount entirely insignificant in the circumstances." He also says that I acknowledge that "steam acts as a disinfecting agent on account of the enormous amount of latent heat which becomes sensible when the steam condenses." Each proposition is incorrect. Steam at admissible temperatures "acts as a disinfecting agent" simply on account of, and in proportion to, the extent to which it wets the bacteria submitted to it and the temperature to which it raises them. This temperature in the case of steam at 120° C. is 20° and not 6° above the temperature of steam at 100°. As I showed in my paper, this increase of temperature may permit sterilisation in a few minutes of organisms which resist steam at 100° for an indefinite number of hours—a difference which is exactly as far from insignificance as efficient is from inefficient disinfection. Regnault's figures refer to thermal units and not degrees Centigrade and state that a pound of steam condensing at 100° C. will without being cooled raise 5·37 pounds of water from 0 to 100°, while if condensing at 120° C. it will raise 5·23 pounds of water through the same interval of temperature. Even this trivial difference in economy of steam, which has nothing to do with efficiency of disinfection, is much more than counterbalanced by the fact that current steam must be allowed to escape in large quantities without condensing if it is to yield such disinfectant efficiency as is within its power, while when air-free it may be confined under pressure without any such waste.

Dr. Thresh says that I overlook the proposition that "if steam is allowed to pass into a vessel containing salt the temperature at which the steam condenses will be that at which a saturated solution of salt boils (109° C.)." Steam would condense in such conditions at any temperature not exceeding 109°; but the circumstance is irrelevant to the disinfection of insoluble bodies such as clothes and bedding. For the disinfection of slops, to which alone it has any general application, simpler means than steam disinfection are usually available.

Dr. Thresh accuses me of ignoring the fact that superheated steam is condensed by objects which are sufficiently cold. I hardly thought it necessary to enter into much detail as to the inefficiency of superheated steam; but so far from ignoring the fact that saturation and condensation occur when superheated steam is sufficiently cooled I find that I stated it twice in the same paragraph. What happens is, of course, that cold objects condense such superheated steam as comes in contact with them until they have reached a temperature at which they can no longer cool to saturation point, and during the rest of the operation the superheated steam does not condense but, on the contrary, re-evaporates a part of the steam which had been previously condensed. If the superheat is sufficiently small or the pressure sufficiently high, disinfection may have taken place before the final failure of the objects to cool the superheated steam to saturation and condense it; but such disinfection takes place in spite of, and not because of, the superheat which, as von Esmarch showed, may wholly prevent the disinfection in any practicable exposure to any admissible temperature.

Passing to the allegations which Dr. Thresh directs at my bacteriological statements I certainly do not admit that "all the known disease-producing organisms for which disinfecting apparatus are required are destroyed at a temperature far below 100° C." On the contrary, I quoted the experiments of Grancher and Ledoux-Labard, in which tubercular infection resisted boiling at 100° C. for three hours without destruction, though it did not kill its test animals till long after test cultures would probably have been thrown away in Dr. Thresh's "practical tests." I quoted Kitt's experiments showing that the organism of symptomatic anthrax grew freely after exposure to 360 minutes' steaming at 100° C., while it was destroyed in 20 minutes by steam under pressure at 110° C.; and if Dr. Thresh wishes to retort on me that he does not know of the transmission of symptomatic anthrax from cattle to man, he is welcome to the distinction, for comparatively recent discussions in regard to tuberculosis show clearly enough that it is difficult to separate organisms which are pathogenic to cattle from those which can be transmitted to man, and that a conjectural difference between their biological characters is not a reasonable basis for a practical art. I could quote other experiments on pathogenic bacteria to a like effect but I refrain from doing so because no one can deny the absolute accuracy of my statements that "the assumption that an unknown infection must have a lower resistance than that of a known bacterium is made, where it is made, without a trace of evidence in its favour and in no other art would such an assumption be regarded even as excusable. On the contrary, the fact that the infection was unknown would, on the principles of any established art, place it on the list of the most resistant organisms until evidence to the contrary should appear." Neither can anyone, so far as I know, suggest a reason for believing that the absence in bacteria of pathogenic effect on man is necessarily associated with an increased resistance to disinfection by steam. The data of steam disinfection are most conveniently and have been most frequently determined on such organisms and it has been proved to demonstration that current steam is incapable of destroying them with certainty in any practicable exposure whatever. Dr. Thresh objects to my use of "theory" to explain and correlate the observed facts of disinfection. But in respect to the disinfection of small-pox and scarlet fever he is himself setting up against these facts theories of the causation of these diseases which he himself admits to be "open to discussion," and a wholly arbitrary speculation as to the temperature at which their infections are destroyed.

Space did not permit Dr. Thresh dealing with my statement that return cases of infectious disease, and notably of the persistent diseases of which the infections are "open to discussion," may be due to insufficient disinfection beyond remarking "that there has never been any proof adduced to this and that should it be true it would affect one form of machine as well as another, assuming that each was an efficient steriliser if properly used." It must rarely be possible in the complex variety of causes to which return cases may be attributed to demonstrate the culpability of a failure in steam disinfection, though instances have repeatedly been brought to my knowledge in which this has occurred. If, moreover, such an accident had been discovered a health committee would seldom regard it as judicious to allow the fact to be published. It must, however, be obvious that the necessarily wide impunity in which a steam disinfector works is the worst of all reasons for putting up with an inefficient standard or for making the assumption that in actual experience steam disinfectors will give better results than in laboratory experiment. As to the second point, I am in agreement with Dr. Thresh. Return cases would be as likely to be caused by one machine as by another if each was an efficient steriliser; but obviously the proposition begs the whole question which, so far as Dr. Thresh's letter goes, is whether a disinfector using current steam at atmospheric pressure is an efficient steriliser.

As Dr. Thresh's argument is composed largely of references to propositions which he alleges that I ignore it may not be irrelevant in conclusion to point out that the following are among the facts which he himself seems to have ignored. Direct bacteriological experiments, some of them made on actual disinfectors and some under the more accurate conditions of laboratory experiment, have shown the resistance of bacterial spores to be capable of exceeding any disinfectant action that can be produced in practice by current steam at about atmospheric pressure. A great increase of resistance is introduced in practice into steam disinfectors by the presence of greasy dirt, dried pus, sebum, and other hygrophobic substances and wide variations in resistance may occur between organisms of the same species according to the method of their culture and the extent of their dryness. In a given current-steam machine the disinfectant power may be reduced to as little as a third of even its possible maximum by variations in the steam velocity which

depend on the activity of the stoker. In a practical art it is necessary to provide such margin of safety as is possible.

I am, Sirs, yours faithfully,

London, Oct. 11th, 1905. WOLF DEFRIES.

BREAKING UP THE STREETS.

To the Editors of THE LANCET.

SIRS,—My attention has been called to the remarks in your issue of Oct. 7th in which you condemn the London Hydraulic Power Company in very strong terms for its action in breaking up the recently laid paving in Regent-street.

The company was not to blame. The premises to which you refer have been supplied with power, since they were built, from a main in the back street through a private yard; this yard is now being built over and it was only after the new paving work on the east side of Regent-street had been completed that the company received notice that the service pipe would have to be removed. It thus became necessary to supply the premises from Regent-street by laying a new service main from the west side.

This case illustrates the impossibility of providing against the breaking up of new pavings, even with the best intentions and desire on the part of the companies or undertakers to consult the convenience of the public and to carry out the wishes of the local authority. Except to a limited extent the works required cannot be ascertained beforehand. With our streets constructed as they usually are, without subways, inconvenience is inevitable and even where subways exist they are frequently not in the right place or are of unsuitable construction. Therefore, all that can be done is to lessen the inconvenience as much as possible. The whole expense of street openings and making good is paid by the company and it is therefore to its interest to do any necessary work in advance of repaving so as to lessen the cost. The company is always ready to comply with any reasonable direction of the local authorities in the execution of such works.

I am, Sirs, yours faithfully,

F. M. BENDALL,
Secretary, London Hydraulic Power Company.

Palace-Chambers, Bridge-street, S.W., Oct. 13th, 1905.

DRUNKENNESS AND ALCOHOLISM.

To the Editors of THE LANCET.

SIRS,—Your annotation under this heading in THE LANCET of Oct. 14th is, I think, very important both from the pathological and social standpoint. Drunkenness, so far as my experience and observation show, is a common failing amongst a mining population, but the diseases usually associated with chronic alcoholism, such as brain, liver diseases, and peripheral neuritis, are unexpectedly and peculiarly infrequent. I therefore conclude that drunkenness and chronic alcoholism are not sequential. I attribute this largely, if not entirely, to the fact that in the mining district with which I am most familiar beer is the staple drink and so long as a man sticks to his beer chronic alcoholism does not follow. I am not now discussing the question whether beer whets the appetite for more potent drinks. Beer is consumed in enormous quantities, especially at the week's end in this part of the country, but it rarely, if ever, leads to chronic alcoholism unless alcohol in a more potent form is also imbibed. The occasional drunkard appears to suffer little, except some temporary functional derangement, and I believe many every week-end drunkards make excellent workmen and seem not much the worse for it physically if they are fairly abstemious, work during the week, and start with a fair constitution. With the chronic soaker, especially of strong spirituous liquor, the results are entirely different and most disastrous. It is such persons who exhibit the pathological features of the chronic alcoholic and the law as presently carried out does not influence them; moreover, that tendency just now shown to do away with the house where beer only is consumed is harmful. Perhaps some of your contributors can give the relative amount of inefficiency and disease caused by beer or spirits, or can give comparative information bearing upon this point, from the countries where one or other is the staple article of consumption.—I am, Sirs, yours faithfully,

R. PROSSER WHITE,
Honorary Medical Officer, Royal Albert Edward Infirmary, Wigan.

Oct. 18th, 1905.

SANATORIUMS AND THE ERADICATION OF CONSUMPTION.

To the Editors of THE LANCET.

SIRS,—The letter from Dr. W. B. H. Wood in THE LANCET of Oct. 14th, p. 1137, is of value in its emphatic recommendation that medical practitioners should distinguish phthisis in its earliest stages and advise cases to be placed promptly under sanatorium treatment—the best treatment at present known. Now, nothing would operate more certainly and promptly towards encouraging early diagnosis and the ensuing best advice being given than compulsory notification of the disease throughout the kingdom, carrying with it the usual penalties for failing. Cases could then be recommended for removal to an institution for special treatment. I would suggest that early diagnosis be founded upon the finding of tubercle bacilli in the sputum and special facilities should be given by local public bodies for promptly subjecting sputum to microscopical examination, the work being done for any medical practitioner applying either free or for a nominal fee. Nothing would prevent patients from being properly treated in suitable institutions should their medical advisers consider phthisis to be imminent while no bacilli were yet present. The stimulus towards early diagnosis which notification would bring would also have the effect of further advice being given as to what steps should be taken in order to prevent other cases of the disease from developing by the practitioner or medical officer of health investigating on the spot the probable cause of any case notified. Thus unhealthy dwellings, employments, and any other conditions might be indicated. Under notification and a more rigorous public health discipline we should soon bring down the death-rate from consumption—and even other diseases as well—for where consumption is there also must be favourable surroundings for other diseases.

I am, Sirs, yours faithfully

Porchester-place, W., Oct. 16th, 1905. HAYDN BROWN.

MEDICINE AND RELIGION.

To the Editors of THE LANCET.

SIRS,—It is not necessary to dilate on the extent and character of the evils for which the craze of Christian Science has been responsible. We all have known or read of valuable lives sacrificed which might have been saved or prolonged by skilled attention; of trivial ailments growing through neglect to causes of persistent and painful disablement; and—perhaps most tragic of all—of children allowed to linger in suffering as vicarious victims of the blind fanaticism of their parents, and dying without even the solace that delusion may bring to the incorrigible dupe. Surely this revival of the *patria potestas* is a strange anomaly in a society where justice puts the duty of defending the children of the poor so high, even above its function of punishing the wrongdoer, in the case of the inscription over our newest temple of Themis.

These mischievous results of Christian Science in cases of physical disease were evidently present to the minds of the speakers at the Church Congress, though their utterances on the subject might well have been more robust. But they appear to have been much less conscious of other effects which are perhaps graver, and which by their character should have special claim on the attention of divines. I refer to the influence that this creed exercises on the mental and moral health of its votaries. One would have expected, for instance, that men of experience in human nature would have been more keenly alive to the danger of a state of mental exaltation "impervious to all representations of reason and common sense," and that they would have recognised that such a condition engendered by delusion was not likely to make for sanity or for rational religion. And one would have thought, further, that the natural antipathy which the healthy mind must experience for this morbid temper would be increased by the knowledge that such notions lent themselves to easy exploitation at the hands of knaves and hypocrites. The demoralising influence that is thereby exercised, not merely on the emotional dupes who are the victims of this quackery but on the whole community who are treated to the spectacle of successful and unrebuked humbug, ought surely to be a matter of grave concern to those who have so large and responsible a part in the moulding of public opinion.

In these days when, as other speakers at Weymouth justly observed, the clergy and the medical profession are able to work together in harmony and mutual confidence, we are entitled to expect that those who have authority in religious matters shall coöperate actively with all efforts to combat the methods of quackery. The Church renders large and ungrudging service to our common interest in the care of the necessitous sick; in protecting the poor in pocket and in mind against the wiles of the charlatan she would do work of no less value and fully congenial to her mission. Even those of us who do not want to put lessons in hygiene in the place of sermons would be glad if the frauds of the pious quack were occasionally pilloried in the pulpit and if his advertisements were less readily admitted to the columns of the religious press. I am, Sirs, yours faithfully,

Oct. 14th, 1905. M.D.

VOLUNTEER MEDICAL OFFICERS.

To the Editors of THE LANCET.

SIRS,—In reply to the letter of "A. M. R." which appeared in THE LANCET of Sept. 30th, p. 995, "Surg.-Capt. Vol. Certif." ought to have known that all recruits passed are periodically examined by a Royal Army Medical Corps officer detailed for recruiting duties and there is no question of superseding in the matter. "Surg.-Capt." very justly complains that he had to do all the work for nothing, besides having his holiday spoilt. May I ask why he should not be paid for this work which is quite outside his duties? "A. M. R." goes on to say that in the vast majority of cases the opinion of the civilian medical man—whether "Volunteer certificated" or not—as to a man's fitness for service abroad or for active service is worth very little. The regulations laid down for the examination of recruits are simplicity itself and if any third-year student after reading them is not competent to give an opinion as to a man's fitness or otherwise for the service I should strongly advise him to seek some other calling.

As a Volunteer surgeon I have been examining recruits for every branch of the service for the past 15 years and during that time I have had two recruits rejected—but doctors sometimes differ. May I also mention that during the above-named period I have been associated with three station hospitals and have come into contact with a number of Royal Army Medical Corps officers, some efficient in every sense of the term, some otherwise. Many Volunteer medical officers are men of high professional attainments, Fellows of the Colleges, hospital surgeons, &c. Select haphazard any five of them and I will back them to hold their own against any five officers of the Royal Army Medical Corps similarly chosen and that at playing the latter's own game.

In conclusion, I think the War Office will not be called upon to settle the question of the Volunteers' grievances and "differences"—the British public will see to that.

I am, Sirs, yours faithfully,

Oct. 14th, 1905. ONLY A VOLUNTEER SURGEON.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Education of Infants.

IN view of the proposal of the Board of Education to withdraw the block grant of 17*s.* per head which has hitherto been paid upon children between three and five years of age in infants' schools, there has been considerable discussion at the meetings of the local education committees. At King's Norton they have decided that no child under five years of age shall be admitted to the public elementary schools in the district. At Stoke-on-Trent they have decided to admit no children under four years between now and March 31st next and that after March 31st next no children under five years shall be admitted. In Birmingham no action will be taken in regard to the matter until it is seen whether the announcement of the Board of Education in reference to the grants is put into operation. In the discussions which have arisen the question has been considered from the medical aspect as well as from the financial. It has been stated that epidemics of measles, scarlet fever, diphtheria, and whooping-cough would be more rare and less severe if the age limit for admittance to schools were raised to five years, and that children under five years are under healthier conditions at home. As to the latter statement, it is pointed out that a distinction should be made between children in slum schools who are believed to be better in school and children in other schools who are probably better outside. A serious difficulty is that if the younger children are kept at home the older children in many cases will stay away to look after them, particularly where the mother is compelled to go out to earn a living for the family.

District Hospital News.

By the will of Mr. Samuel Suckling of Claremont, Gravelly Hill, Birmingham, the Birmingham General Hospital, the Queen's Hospital, the Children's Hospital, and the General Dispensary all benefit.—The new workhouse infirmary at Tamworth was formally opened on Oct. 5th. The building, which with all fittings cost £10,655, occupies a commanding position, having a western aspect with magnificent views of the country round. The chief aim in designing the building has been to erect a good substantial structure with good ventilation, light, air, cheerfulness, and comfort.—At the annual meeting of the governors of the Stratford-on-Avon General Hospital mention was made of the endowment of a child's cot in memory of the late Sir Arthur and Lady Hodgson and of a bed on the women's side in memory of the Rev. Joseph Newton and Mrs. Smith. The number of patients admitted during the past year was in excess of any previous year—namely, 220. The subscriptions for the year amounted to £486, an increase of £22 on last year. The year commenced with a debit balance of £200, which was paid off by transferring that amount from the reserve revenue account. The debit balance at the close of the year was £154.—The infirmary committee of the Aston board of guardians has again had before it the question of the extermination of rats in the infirmary wards and other workhouse buildings. The patients complain that they are unable to sleep and that the rats even jump on their beds. Energetic ferreting is now being carried on by a professional rat-catcher.—At the last meeting of the Birmingham guardians it was decided to acquire a site in Summer Hill-terrace for a home for "ins and outs."—The Coventry board of guardians has decided to enlarge the workhouse infirmary and has passed a resolution to borrow £7879 to cover the cost of the work.

The Local Government Board and Female Resident Medical Officers.

The Local Government Board, writing with reference to the appointment of Dr. Catherine Fraser as resident medical officer of the Aston workhouse, stated that it considered that the appointment of a lady as assistant medical officer would be open to objection, having regard to the fact that it would be her duty to act as medical officer in chief during the absence of that officer and the Board therefore requested that the matter might receive the further consideration of the guardians. In the discussion which followed expressions of approval were used by various members of the committee in speaking of the appointment and the clerk was directed to write to the Local Government Board to that effect. The difficulty alluded to by the Board in its letter would be met by the appointment of a locum-tenent when the chief medical officer was away.

The Discolouration of the Birmingham Water.

The complaints which have been made so frequently about the discolouration of the water from Wales continue to occupy the attention of the water committee. At its last meeting some interesting records were produced to show the amount of discolouration each day from the beginning of the year. The records were obtained by means of the tintometer. There is considerable variation in the daily records. During the first part of the year the yellow tint largely predominated and the discolouration was most marked in January. After that the colour was gradually reduced, the lowest point being touched in May, June, and July. In fact, on one day in June the water was recorded as being so clear as to resemble distilled water. Since the beginning of August there has been less transparency and when the rainy period set in after a drought the colour of the water deepened until it became almost as brown as it was in the early part of the year. It is believed, however, that the highest readings have now been taken and that the discolouration will gradually become less marked, especially as the Pen-y-Gareg reservoir in the Elan Valley is being prepared to provide for the filling of the Caban Coch reservoir next month. The tint of the water is considered not to affect in any way its quality for domestic purposes. The discolouration is attributed to the effects of peat in the gathering ground.

Oct. 17th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

E Fumo Lux.

THE above is the heading of an article in a Manchester paper on the establishment at Radcliffe of an electrical power distributing installation intended to cover a wide area. The writer anticipates a complete revolution in the external aspect and the social conditions of Manchester. One result looked for is the abolition of the smoke nuisance which everyone will agree has been, and is now, a continuously demoralising and deteriorating influence. The factory chimney, "the most hideous object in the world," would be no longer needed. The "thousands of those vertical drains which sluice their filth into the general air" would be useless. But the good would not stop here. The domestic chimney is to disappear, for "there is no reason why our houses should not be supplied with light and heat for all purposes from the central power station," nor why the sky and air above our vast cities should not become "as free from smoke and smoke-fog as the atmosphere of veldt and prairie." It is also suggested that our streams will become clean. The Mersey between Didsbury and Northenden and the Thame which runs through Ashton and Dukinfield are named as specimens of the condition of abominable filth to which our once beautiful waterways are reduced. The Irwell is not mentioned but it can claim a foulness surpassed by none. It is almost beyond the powers of the imagination to realise the transformation that clean streams would produce in a manufacturing district, but we fear that the anticipations of the writer will not be fulfilled for some time. Man is slow to move even in these so-called progressive days and the very progression of business renders the haunts of man more filthy than ever.

Mossley Water-supply and Lead Poisoning.

Five samples of water which had been lying in the Mossley pipes all night were obtained recently and examined by an independent firm of Manchester analysts, with the result that four showed minute traces of lead while the fifth showed none. Further samples were taken in the middle of the day on which Mr. C. Estcourt, the city analyst for Manchester, reported as follows: "No lead, copper, or other poisonous metals present." It is stated that the water is treated automatically for excess of acidity. Some of the service-pipes have galvanised tubing, but there are still a number of lead service-pipes in use. One of the medical men said he knew of a few cases of lead poisoning in the town attributable, he thought, to the water. The matter was discussed recently by the town council, when one councillor said: "Some doctors, it was true, had reported a few cases of colic." Another said that "one doctor had mentioned to him five serious cases and another six. He had heard there were 30 cases and some also at Greenfield." An alderman said that they would spare no expense to improve matters, but even after this declaration it appears that no action was taken by the council. Notwithstanding Mr. Estcourt's negative evidence as to the samples he had examined, the fact on the positive side that four out of five samples examined under other conditions showed the presence of lead cannot be set aside, nor the fact that, as stated by Mr. J. Aspinall Marsden in a letter to a Manchester paper, it was given in evidence at a Mossley inquest that lead poisoning was "a very common complaint" in that town. Mr. Marsden urged in strong language that the Lancashire county council should ask the Local Government Board for powers to deal with local authorities supplying "plumbo-solvent water."

The Cost of Vaccination.

At the meeting of the Salford council on Oct. 4th Mr. George H. Pinder moved a proposition stating "that it is desirable that the practice of vaccination should be controlled by the public health authority as the consequences of any failure have to be borne by them. Also, the cost of vaccination under the present Act has been made unnecessarily heavy, and in any further legislation the scale of remuneration should be modified, and in the case of large towns a medical vaccination officer be appointed at a fixed salary to devote the whole of his time to the duties of vaccination." He said that the present Acts were unjust both to the ratepayers and to medical practitioners. He was convinced that vaccination could be carried out as well, or indeed better, by a vaccination officer appointed by, and responsible to, the council and at less than a fourth of the present cost. The figures he had obtained from the clerk to the guardians showed that during the year ending March, 1904, the cost of administering the Acts was £4226 11*s.*, of which £3669 were paid to the "parish doctors," and that last year the cost was £2337 4*s.* 1*d.* The parish medical attendants were also the public vaccinators appointed by the guardians. He went on to state that the public vaccinators were also in private practice and that their duties not merely gave them the *entrée* but sometimes "absolutely forced them" into houses under the care of other practitioners. He believed the council could get the services of an officer who would perform all the public vaccinations in the borough for £500 a year and devote all his time to the service of the health committee. He believed the whole work of public vaccination could easily be done for less than £1000 a year. The motion was unanimously adopted. The important question for the community is, of course, whether the proposed scheme would insure more efficient protection from small-pox than obtains at present. If it would do so no doubt the interests of the public vaccinators who are at present able to increase the none too munificent stipends of the Poor-law service by the vaccination fees would go to the wall. It is not clear that the "awkward positions" of the public vaccinators who have at present the right of entry would be done away with, unless the new officer were possessed of infinite tact and abiding loyalty to his professional brethren. One of the aldermen congratulated Mr. Pinder and expressed surprise that the "medical association" had not taken the question up more strongly. He must have felt horror-struck when he told the council that "he had heard of public vaccinators getting as much as £1000 a year in fees." It may safely be presumed that all had been honestly worked for and that the value of the protection thus obtained and the saving of the ratepayers' money from costly epidemics, to say nothing of the grief and misery accompanying them, would perhaps be beyond the alderman's powers of calculation.

Copper Sulphate in Peas.

The Ramsey stipendiary magistrate was asked the other week to decide whether preserved peas containing sulphate of copper were injurious. The prosecution alleged that 3·22 grains found in a sample made the peas injurious. Both sides called medical men as witnesses, providing another opportunity for showing how medical men differ. Those for the defence said that copper sulphate was used as a nerve tonic and astringent and would be innocuous when taken in such quantities as had been found in the sample. As nerve tonics should not be taken except when ordered by the medical attendant it would be inconvenient probably to both the patient and the family physician if the permission of the latter had to be obtained whenever the former wished to partake of preserved peas.

A Feeble-Minded Family.

The Warrington magistrates had rather a remarkable case before them on Oct. 13th, when the seven feeble-minded children of "a hard-working man" were ordered to the workhouse. The wife's physical infirmities were such that she could not look after the home. Was the feeble-mindedness the result of environment or heredity?

Oct. 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Inspection of Carcasses.

ONE of the most important subjects discussed at the recent congress of the Sanitary Association of Scotland, and one on which the municipal representatives expressed very strong views, was the expediency of having a uniform and authoritative inspection of animals and carcasses. The matter has been taken in hand by one of the subcommittees of the health committee of Glasgow. It has been agreed to recommend that a conference of the local authorities of Scotland should be held in Glasgow at an early date with a view to approach the Local Government Board and to ask that body to take steps to secure such uniform and authoritative inspection throughout Scotland.

Cottage Hospital at Kelso.

A three days' bazaar was held last week in the Corn Exchange, Kelso, in aid of a proposed cottage hospital for the town and district. The opening ceremony was performed by Princess Christian and she kindly consented to take the Duchess of Roxburghe's place at her stall as the latter lady was unable to be present owing to recent family bereavement. Kelso Dispensary, which the hospital is to supersede, was founded in 1777 and owes its origin to the beneficence of the Hon. George Baillie of Jerviswood, great-grandfather of the Earl of Haddington who is at present president of the dispensary. Although the dispensary has some £8500 of funds these cannot, under the terms of the trust, be applied to the building of a new hospital and dispensary but only towards the maintenance of such an institution after meeting the costs of dispensing and outdoor nursing. The design of the bazaar was to raise the capital fund necessary to build and to equip a cottage hospital to take the place of the old dispensary buildings. It is gratifying to note that a sum of about £3000 was obtained.

Blawarthill Joint Hospital.

The medical officer in charge of an isolation hospital is often brought into somewhat delicate relations with the medical men who send cases into the hospital, and the position is all the more difficult where, as in the present case, the medical officer in charge is himself engaged in private practice in the district. In THE LANCET of May 27th, 1905, mention was made of a case certified as enteric fever and sent into Blawarthill hospital, the patient being discharged in two or three days as Widal's reaction was negative. A complaint was made by the medical man who sent in the case and the matter was brought before the hospital board at the time. Trouble has arisen again recently over a case of diphtheria which was discharged as wrongly diagnosed. The medical practitioner sending the case in, who happened to be medical officer of one of the combined local authorities, wrote twice about the patient to the medical officer in charge but received no answer. When the matter was brought up at the monthly meeting of the joint hospital board last week the medical officer in charge stated that it was not part of his duties to correspond with outside medical men and that the questions raised were not matters upon which he should be asked to correspond, but if the medical man had called upon him or telephoned he could have given him all the information which he required. The position of the medical officer in charge of an isolation hospital is no doubt often very difficult as regards those cases of doubtful diagnosis but the difficulties are seldom so great that they cannot be overcome by the exercise of a little tact.

The Risks of Tramway Cars.

There are certain dangers which the inhabitants of a city equipped with a system of electric cars come to recognise. One is the danger to children of being run over—a danger which has been minimised by the attachment to the cars of the most modern life guards. Another is the snapping overhead of a live cable, but fortunately where the management is awake to its responsibilities this is a danger which seldom, if ever, occurs. A new risk has been noted recently in Glasgow where a woman travelling on the top of a car received some burns on the back of her neck by electric sparks falling upon her from the wire above.

Sanatorium for Aberdeen.

Lady Lumsden, widow of Sir Harry Lumsden, has through Dr. Matthew Hay, medical officer of health of Aberdeen, offered to subscribe £1000 for the purpose of starting a sanatorium for consumptives. She makes it a condition that if nothing should be done within the next six months her offer will be withdrawn.

Oct. 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal University of Ireland.

AT a meeting of Convocation of the Royal University of Ireland held on Oct. 11th a strong demand was made for the throwing open of the library and grounds of the University to the graduates. The meeting recommended the conferring of the degree of D.Sc. upon Professor Antony Roche as a recognition of his labours in connexion with hygiene and public health.

Infantile Mortality in Dublin.

On the occasion of the opening of the 187th session at Jervis Street Hospital on Oct. 17th an important paper dealing with the high rate of infantile mortality in Dublin was read by Dr. William J. Thompson, physician to the hospital. Sir Francis R. Cruise occupied the chair.

Royal Academy of Medicine in Ireland.

The annual meeting and ballot for officers of the Royal Academy of Medicine in Ireland took place on Oct. 13th. There has been little change in the *personnel* of the members of the council and sections. The President, Sir Thornley Stoker, has been nominated to represent the Academy on the executive committee in connexion with the proposed visit of the British Association to Dublin in 1907.

The Irish Committee of the British Medical Association.

At the last annual meeting of the British Medical Association, held in Leicester in July, 1905, it was decided to form a committee (as had been done in the case of Scotland), to be called the Irish committee, to look after Irish medical affairs. The committee, which consists of honorary secretaries of Irish branches, of members of central council elected by Irish branches, and of additional representatives elected in place of honorary secretaries who are also members of the Central Council of the British Medical Association, met for the first time on Oct. 14th in the Royal College of Physicians, Dublin. Professor J. W. Byers of Belfast was unanimously elected chairman for the ensuing year and Professor A. H. White of Dublin honorary secretary.

The Belfast Maternity Hospital and the Central Midwives Board.

At its May meeting the Central Midwives Board refused to grant the memorial of the board of governors and medical staff of the Belfast Maternity Hospital, urging it to place on the roll of certified midwives nurses trained in that institution previously to April 1st, 1905. It will be remembered that on March 23rd the Belfast Maternity Hospital had been recognised as a training school for midwives but a place on the roll of certified midwives had been refused to nurses hitherto trained there, an opposite decision being come to in the case of the maternity hospitals in Dublin, Cork, and Limerick. In THE LANCET and *British Medical Journal* of June 10th the Central Midwives Board was severely criticised for this decision, and shortly afterwards, in reply to a question asked in the House of Commons by Mr. Craig, the Chief Secretary for Ireland said that the reason why the Belfast Maternity Hospital was not recognised was because application had not been made in proper time, this being the reply furnished by the Central Midwives Board to the Lord President of the Council. The Marquis of Londonderry was accordingly approached and to him it was pointed out that the information supplied him as to the Belfast Maternity Hospital having applied too late was incorrect; that there was strong public feeling aroused in Ireland at the unfairness of the decision; that the medical press had commented severely on the action of the Midwives Board; and that the council of the British Medical Association had, on July 5th, passed a resolution asking the Central Midwives Board to reconsider the question. The Lord President of the Council learned from the officials of the Central Midwives Board "that it was only on March 22nd that the hospital applied to the board for the recognition of its certificate for the purposes of Section 2 of the Midwives Act—a date so late that the board were of opinion that nothing could be done to render the application effective before the 1st of April, when the provision in question expired." It was at once pointed out to Lord Londonderry in reply to this statement that the *second* application was made on March 22nd and that the first had been made on Feb. 14th and that the second application left *eight* clear days before April 1st, which was ample time for the formalities connected with the application of the nurses. After considerable correspondence between the Privy Council and the Belfast Maternity Hospital, on the one hand, and the Central Midwives Board on the other, the Lord President of the Council suggested as a settlement that nurses trained in the Belfast Maternity Hospital who had applied to the

Central Midwives Board before April 1st, 1905, should be placed upon the roll of certified midwives, and after consideration the Belfast Maternity Hospital authorities accepted this compromise, because, although they felt that all the nurses of their hospital should have been placed in the same position as those nurses of the similar institutions in Dublin, Cork, and Limerick, they believed that such an arrangement would cover the case of the nurses who, in accordance with public notice given in the Belfast papers by the hospital authorities, had already applied.

Oct. 17th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Hospital Matters in Cambogia.

M. Morel, the French resident in Cambogia, is at the present occupied with the organisation of a hospital service for that country. Some months ago it was decided to build a native hospital and maternity charity and it is expected that the first block will very soon be completed. Sisovah the King, who is quite awake to the utility of the proposed innovations, has expressed his willingness to defray part of the expense. Depôts for drugs and dressings will be established in the chief town of every department under the supervision of the resident. Drugs and material for disinfection will be supplied to the poor gratuitously. These measures no doubt will be of great value and the local committee of hygiene has given its entire adhesion to the scheme. Two colonial surgeons have already arrived in Cambogia.

The Conservative Surgery of the Limbs.

I have already mentioned that the French Surgical Congress was sitting in Paris during the same week as the meeting of the Congress on Tuberculosis. Many interesting papers were read, among which I may mention that communicated by Dr. Bilhaut. The case was that of a man whose left humerus had been fractured about the middle by the bite of a horse. Most of the soft parts were reduced to pulp and the ends of the bone were sticking out, but fortunately there was a bridge of sound skin remaining on the inner side of the arm which covered over the vessels and nerves in that region. The radial artery was beating normally. The dead soft parts were cut away, the upper and lower fragments of the biceps were stitched together, and the two fragments of the humerus were trimmed up on the slope (*résection en biseau*). The bone was then wired and the arm was thus restored in excellent condition. The patient was shown for examination by the members of the French Surgical Association. Dr. Bilhaut, in conclusion, said that conservative surgery should be tried in all cases of traumatism when the main vessels and nerves were intact and when there was a fair chance that the essentials of the limb—namely, mobility in the upper limb or firmness and straightness in the lower limb—would obtain. The main points to follow were: surgical intervention as soon as possible after the injury, to remove dead parts, to adapt the length of the osseous lever to the new conditions brought about by the measures taken with the soft parts, to arrange the limb for the purposes of reunion just as if the operation had been done upon perfectly healthy tissue, and finally, to avoid operative mistakes. It must be remembered that traumatism in the limbs almost always occurs in healthy limbs and therefore that there is more vital energy available for healing than would be the case in a sick patient.

Meat and Fish Poisoning in Relation to Certain Infectious Diseases in Man.

At the meeting of the Academy of Medicine held on Oct. 3rd M. Babés of Bucharest read a paper in which he endeavoured to demonstrate that there is a whole series of diseases affecting human beings which have as their cause the ingestion of germs introduced into the digestive tract by the flesh of diseased animals. Among the germs in question are the bacillus enteritidis and the various paratyphoid bacilli. The disease shows itself in man as an abnormal type of typhoid fever, as a septicæmia, or as presenting the clinical picture of ordinary typhus fever. The true nature of these affections is demonstrated by means of the agglutination reaction, which should always be looked for not only as regards the bacillus of Eberth but also as regard the other bacilli in question. M. Babés said that he had seen two small epidemics coming under the head of such infections. The one followed on the eating of a lamb and the other after eating certain fish.

Operation in Two Cases of Wound of the Heart; Recovery.

At the meeting of the Society of Surgery held on Oct. 11th M. Picqué related the case of a man on whom his house surgeon (*interne*) had operated. The patient had been stabbed in the cardiac region and although the thoracic wound did not bleed there were symptoms of internal hæmorrhage. On turning up a cutaneous and muscular flap and resecting portions of the third and fourth ribs blood was found in the pleural cavity. The pericardium was seen to be distended and exhibited a perforation from which blood escaped with every cardiac pulsation. On the wound being enlarged and the clots removed from the pericardium a wound of the left ventricle was seen. This was closed with two silk sutures, the pericardium and the thoracic wounds were also closed, and the patient recovered. Shortly after this case M. Picqué himself operated upon a young woman, aged 24 years, who, attempting suicide, had shot herself in the cardiac region with a revolver. When M. Picqué examined her she showed no signs of any cardiac injury and her temperature was 38·3° C. Convinced, however, that the heart was injured M. Picqué cut down upon it. There was a hole in the pericardium which was full of blood. On removing this a wound of the left ventricle and auricle was seen. No wound of exit of the bullet was seen and the bullet itself was not found. No sutures were employed but the pericardium was drained and the patient recovered.

Oct. 17th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Association of Naturalists and Medical Men.

THIS year the German Association of Naturalists and Medical Men held its annual meeting outside the borders of the German Empire—namely, in the well-known health resort of Meran, in the Austrian Tyrol. Professor Winkel of Munich was in the chair and delivered the inaugural address, which was followed by the speeches of the representatives of the Austrian Government, of the city of Meran, and of other corporations. In the first general meeting an address on tropical diseases was delivered by Dr. Meyer who dwelt on the practical benefits of studying these diseases, an illustration of which was afforded by the fact that rational measures for the prevention of malaria have already produced an obvious decrease in that disease to the great advantage of the residents in many of the colonial possessions of the European Powers. With respect to beri-beri he said that opinions as to its causes were still divided. Whilst Japanese medical men believed it to be a toxic disease, others were of opinion that its causes were miasmatic. Observations made during long voyages on board sailing ships had finally led to the conclusion that the nature of the food consumed might have an influence on its development. Tropical diseases, he said, were caused by protozoa, organisms which found in the tropics the best possible conditions for their development. This was especially the case with respect to the parasites of malaria and trypanosoma. Dr. Meyer finally spoke on the subject of immunity, stating that congenital immunity had no existence, for Professor Koch and others had ascertained that the children of the native population were liable to contract the special tropical diseases and died from these causes in great numbers; the children who survived these attacks were when they reached adult life erroneously believed to be exempt. Addresses on medical subjects were read in the general meetings by Professor Correns of Leipsic, Professor Heider of Innsbruck, and Professor Hatschek of Vienna. The combined medical section discussed the question of pellagra, a disease especially prevalent in Italy and the southern provinces of Austria and Hungary. It was therefore almost exclusively Austrian medical men who took part in the discussion. Professor Neusser of Vienna said that the agricultural population were peculiarly liable to the disease and that none of the manifold races of the southern provinces of Austria were exempt. Persons of both sexes and all ages might suffer from pellagra; it was, however, rather rare in infants. Though the disease was not hereditary the descendants of the patients showed degenerative symptoms.

It was remarkable that townspeople living in the affected districts among the peasantry were as a rule exempt, so that the disease was very probably not contagious. Its prevalence was greatest in the spring and summer but in the winter it disappeared. Experiments on the serum treatment of the disease had been made and gave some promise of success but further investigation was necessary. After a description of the symptoms of pellagra, which, as a chronic toxic process, affected every organ of the human body, Professor Neusser proposed the creation of an international institute for the study of the disease. Dr. Sturli of Vienna discussed the causes of pellagra. He said that the cereals which were the principal food of the southern peasants were known to contribute to the development of the disease. Some observers were of opinion that the deficiency of albuminates in the grain of cereals was the cause of pellagra, some held that only damaged grain caused the disease, and others attributed it to certain micro-organisms. According to recent researches certain species of mycelia were present in the grain and their ingestion into the human body had a toxic effect. The disease, however, developed only in patients whose vitality had been weakened by some cause. Dr. von Haberor, chief medical officer of the province of Tyrol, described the measures taken by the Austrian Government against the spread of the disease. They consisted principally in the improvement of the standard of life of the population, distribution of good milk for children instead of food prepared from grain, the establishment of bakeries, the control of the sale of corn, &c. Many other interesting papers were read before the medical sections of the Congress. The meeting next year will be held at Mannheim.

The Transmission of Cerebro-spinal Meningitis.

As I have already mentioned in THE LANCET of June 10th, p. 1619, the point of entrance of cerebro-spinal meningitis is probably the nose and the naso-palatal cavity. An interesting article on the manner in which the disease is propagated has been recently published by Dr. Jäger of Strasburg in the *Medicinische Klinik*. He has found meningococci in the nasal mucus not only of patients but also of persons in good health who had been in contact with the sufférers whilst other persons proved to be free from the cocci. In not less than 40 per cent. of the families of patients characteristic intracellular diplococci were present in the nose and could be cultivated in suitable media. He comes to the conclusion that just as in the case of bubonic plague, cholera, enteric fever, and diphtheria, so also in cerebro-spinal meningitis the disease may be transmitted by healthy persons who act as carriers of the contagion and in that way infect others who are more susceptible to it. The transmission probably occurs by coughing, sneezing, and spitting, in which droplets of fluid are thrown into the air. On this account the families and friends of the patients should be carefully examined as to the presence of these germs in their nasal mucus and if the examination prove positive they should be isolated until the organisms in question disappear.

Cholera in Germany.

The fear that the cholera epidemic might attain considerable proportions in Germany and the neighbouring countries has fortunately not been justified by the result, for only two cases, of which one proved fatal, have occurred in Berlin. The patients lived on board river or canal boats and their families, who were at once put under strict isolation in the Moabit Hospital, are now discharged. In the eastern provinces no new case has been discovered for several days, but notwithstanding this satisfactory state of matters the river police and sanitary stations will be on the alert for some time owing to the fact that cholera is still supposed to be prevalent in Russia. Cholera bacilli have been discovered in several instances in the fæces of healthy persons residing in the infected district, a fact which is regarded as a proof that the virulence of the bacillus is decreasing and as an indication that the epidemic will soon decline. The total number of cases has hitherto been 241 with 79 deaths.

Oct. 16th.

THE RUSSIAN SOCIETY OF SURGEONS.—This society is inviting representatives of all surgical and medical societies in Russia to take part in its special session in celebration of its twenty-fifth year of active existence.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New Laboratories of the Board of Health in New York.

THE new six-storey fireproof building for the research laboratories of the New York Board of Health has at last been completed and the bureau is now installed in quarters that are in striking contrast to the surroundings in which the work has been done in the past. The new laboratories have been fitted out on a most liberal scale and contain all the complicated equipments necessary for modern research. The first two floors are devoted to the executive offices and dormitories, while the remainder of the space is given over to work-rooms with accommodation for 17 investigators and 47 assistants.

Proposed Restriction of Marriage among the Unfit.

A Bill providing for the legal restriction of marriage among the unfit has been submitted to the legislature of Colorado and is being actively supported by the homœopathic physicians of the State. The proposed measure requires that all persons, both men and women, in order to obtain a marriage licence must first submit to a physical examination by a duly appointed medical board and if either candidate for matrimony has some incurable disease or is undeveloped the licence is to be denied.

Hookworm Anæmia in Porto Rico.

The natives of Porto Rico are being subjected in a wholesale manner to treatment for the hookworm infection which is the cause of the almost universal anæmia prevalent among them. According to a report to the surgeon-general of the army from his local representative $15,000 have already been expended in carrying out the necessary measures and nearly all of the 10,000 patients treated during the three summer months have been cured. In one town 2482 cases, exactly one-third of the total number of inhabitants, were treated.

Yellow Fever in the Southern States.

But little change is to be noted as regards yellow fever though the general tendency is favourable. The total number of cases reported is now somewhat over 3000, with about 400 deaths. The quarantines are being relaxed somewhat in Louisiana, though the neighbouring States still enforce them rigidly, and the entire Alabama-Florida line is being patrolled by mounted guards. Considerable interest has been excited by the reports of the discovery of the causative agent of the disease in the blood of patients. The Drs. Achinard have not yet published a report on their observations but a set of four other investigators, Dr. Pothier, Dr. Hume, Dr. Couret, and Dr. Watson, working independently, have apparently reached much the same results and have published a preliminary communication. The parasites are described as cells varying in size from double that of a pneumococcus to one quarter the diameter of a red blood corpuscle and four main types have been differentiated according to their morphological and staining characteristics. The organisms are apparently never found in the interior of the red cells. The data are still too scanty, however, to permit of conclusions one way or the other.

Oct. 3rd.

Obituary.

JOSEPH COLLIER, M.B., B.S. LOND., F.R.C.S. ENG., L.S.A.

MANCHESTER has, by the death of Mr. Joseph Collier, to bear a loss which will be felt in many very various quarters. Although it has been said (and denied) that 40 is the limit of usefulness his death at the age of 50 years seems almost to his friends as if he had been cut off in his youth. His energy and activity were so great, his enthusiasm was so contagious, that he seemed younger than he really was. Manchester may almost claim him as her own, for though born at Hyde, a few miles away, in 1855 he was educated at the Manchester Grammar School and at the Owens College. His entering the medical profession seems to have been an afterthought as he was intended for another profession, for he was 21 years old before he became a student

of medicine, to the surgical branch of which he decided to devote himself. He graduated M.B. Lond. in 1883, was the University scholar, took the gold medal in forensic medicine, and also obtained honours in medicine, physiology, and histology. In 1884 he took the B.S. degree, with a university scholarship and the gold medal in surgery. He also became F.R.C.S. Eng. and a Licentiate of the Society of Apothecaries. After qualifying he was appointed house surgeon to the Manchester Infirmary, under the late Professor Tom Jones and subsequently became assistant to Professor Morrison Watson in the anatomical department of the Owens College and, indeed, carried on the work for some time after Professor Watson's death. Then he became in turn resident surgical officer and surgical registrar at the infirmary, and on the expiration of his tenure of these offices he began private practice which gradually became considerable. He was appointed an honorary surgeon to the Pendlebury Hospital for Children, and was also visiting surgeon to the large workhouse hospital at Crumpsall. After 15 years' useful and benevolent work at the children's hospital he was appointed consulting surgeon to the institution. In 1899 he became an honorary assistant surgeon to the Royal Infirmary, and soon after full surgeon, which position he held to the time of his death. For many years also he had been lecturer in practical surgery at the Owens College. His standing in the estimation of his peers is shown by his having been Vice-president and President of the Manchester Medical Society and President of the Manchester Pathological Society. He was not a large contributor to medical literature but wrote occasional papers which appeared in THE LANCET and the *Medical Chronicle*.

If this were taken as the full picture of the man it would give a very erroneous view of him as a whole. That he worked, and worked hard at his profession, even though his talents were great, his various distinctions show, but outside his special calling he was a bright, witty, kindly gentleman, with, as Professor G. A. Wright told his students, "the tenderest heart and the keenest sensibility." He could be gentle "and yet show the finest contempt for anything mean." And there was still another side, not always seen or thought of by those who were only aware of the earnest, scholarly face and the grave demeanour of the surgeon. In his early days he was a noted football player and later an equally noted mountaineer. His playground was usually Switzerland and he has often given entertaining lectures on his various climbs. He was a member of the English Alpine Club and President of the Manchester section of the German-Austrian Alpine Club, as well as of the Manchester Rucksack Club. He was present at the lamentable accident on Scafell on Christmas Eve, 1893, which deprived Manchester of the bright and valuable life of Professor Milnes Marshall. Nor were his activities confined to his profession and athletics, for he for some time gave his services to his country as a captain in the Royal Army Medical Corps (Volunteers), a body of which Manchester as well as the medical profession may be proud. It should be mentioned also that golf had a share of his affections and that, as captain of the Manchester Golf Club, "he was present at the club's last annual dinner and delivered a bright and witty speech."

To the medical school his death will be a great loss and affectionate testimony to this effect has been given by several of his colleagues. Professor Wright spoke of him as one of the most brilliant members of the staff, of his inspiring energy and enthusiasm, of his vitality and intense earnestness, while his gentleness has been already noted. Professor W. Stirling, in addition to speaking of the great loss to the medical school and the profession, said that energetic, considerate, and buoyant, he brought with him a feeling of brightness, while his presence and manner inspired confidence. Dr. Hopkinson, the Vice-Chancellor of the University of Manchester, also paid a tribute to his memory, the concluding words of which were that "in Mr. Collier they had lost a very brilliant surgeon and inspired teacher, to whose influence many medical men looked back with gratitude and to many of whom he was one of their most valued friends."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Hermann Schaper, surgeon-general in the Prussian army and formerly for many years Director of the Charité Hospital in Berlin, which was to a large extent rebuilt at his instance and in accordance with his plans. He was a most efficient administrator and was a member of many most important medical and sanitary commissions. His death took place in Charlottenburg at the age of 64 years.—Professor Karl Grunert, an aural surgeon and lecturer on otology in the University of Halle, at the age of 38 years.—Dr. Heinrich Strassmann, a Berlin medical Privy Councillor, at the age of 71 years. In his younger days he published various papers on alcoholism, phthisis, nervous diseases, and on hygienic subjects.—Dr. Chevalier, surgeon to the Paris hospitals.—Dr. Alfred Schaper, extraordinary professor of anatomy in Breslau.—Dr. Edward Sas Korczynski, professor of special pathology and therapeutics in the University of Cracow.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The Vice-Chancellor announces that by the generosity of the Royal College of Surgeons of England the medical department has been enriched by the gift of a number of portrait engravings of eminent physicians and surgeons, chiefly of the seventeenth and eighteenth centuries.—Professor E. G. Browne, M.B., has been appointed director of the School of Living Oriental Languages.—Mr. I. L. Tuckett and Mr. S. W. Cole have been reappointed demonstrators of physiology and Dr. H. B. Roderick demonstrator of surgery.—The following candidates have passed both parts of the sanitary science examination and are entitled to the Diploma in Public Health:—

W. Archibald, M. B. Arnold, J. Booth-Clarkson, A. J. Chalmers, R. N. Cooriawala, L. D. Cruickshank, R. Denman, J. J. Dickinson, G. A. Edsell, A. O. M. Fehrsen, W. L. T. Goodridge, R. Hatfield, S. H. Hawley, H. Le Heath, J. Hutson, H. Kerr, H. R. Kidner, N. MacFadyen, E. W. G. Martin, C. W. P. Moffatt, G. H. Pearce, R. Pollard, W. Sisam, E. Watt, and R. A. Wright.

—At the Congregation on Oct. 12th the following degrees were conferred:—

M.D.—F. Sanger, St. John's; and B. L. Thurlow, Caius.
M.C.—A. J. Fairlie-Clarke, Emmanuel.
M.B.—G. P. Bird, H. J. D. Birkett, H. N. Burroughes, and S. A. Owen, Trinity; F. W. Goyder, St. John's; H. Boulton, Clare; and G. R. Footner, Pembroke.
B.C.—H. J. D. Birkett and H. N. Burroughes, Trinity; H. Boulton, Clare; G. R. Footner, Pembroke; and S. H. Daukes, Caius.

UNIVERSITY OF GLASGOW.—The following have passed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B., Botany; Z., Zoology; P., Physics; C., Chemistry):—

David Rutherford Adams (B., C.), William Shanks Alexander (B., Z., P., C.), Andrew Clark Anderson (B., P.), William Anderson (B.), Alexander John Archibald (B.*), David Barbour (B., P.), Arthur Munby Bayne (B., C.), Charles Stewart Black (B., P.), Archibald M'Allister Blackwood (B.), Douglas Morris Borland (B., P., C.), John Broadfoot (B.), Alexander Hogg Brown (P.), James Buchanan (B., P.*), John Allan Munro Cameron (B., C.), John Archibald Steele Campbell (B., Z.), Andrew Hood Clark (B., P.), William George Clark (B., P.), James Lang Cochrane (P., C.), James Cook (Coalburn) (P.), Robert Craig (B., Z.), Rutherford Cramb (Z., C.), Walter Dawson (B., Z.), James Thomson Dick (B.,* P.), John Nairn Dobbie (Z., P.), Alexander Dunlop (B.), James Kirkwood Dunlop (B., Z.*), Philip Figdor (Z.), James Findlay (B.), Donald Fisher (B., P.), Thomas Sconiar Fleming (B., P., C.), Alexander Fraser (B., P.), David Thomas Crichton Frew (B.,* P.*), Robert Gale (B., C.), William Ernest Gemmell (B., P.), John Gibson (B., P.*), Robert Gilchrist (B., P.), Pietro Giuliani (B., P.), Edward George Glover (P.,* C.), Robert Dunlop Goldie (B., P.*), George Stevenson Gordon (C.), John Gray (C.), Kenneth Charles Gordon Gray (B., P.*), Albert William Gregorson (Z.), George Haddow (C.), Allan Byars Hamilton (B., P.*), William Hamilton (B., Z.), William Howat, M.A. (B.,* Z.*), William Hunter Howat (B., P.), William Howie (B., Z.*), Bently Moore Hunter (B., P.), Cochran Johnston (P.), James Walker Jones (B., P.), John Parlane Kinloch (C.), Alexander Leishman (B., P.), William Thomson Lindsay (B., P.*), William M'Adam, M.A. (B.,* P.*), James Macalan (C.), William Charles Macartney (C.), Ian Macdonald (B., P.), Malcolm Angus Macdonald (B., P.), Donald M'Dougal (P.), William Macewen (B., P.), Alastair Macintyre (B.), Robert Buchanan Forbes M'Kail (B., P.*), John Gladstone Mackenzie (B., Z.), William Maxwell M'Kie (Z.), Thomas Mackinlay (Z.), Alexander M'Kinnon (C.), Donald M'Kinnon (Z.), William Alexander Maclennan (B., Z.), George Macleod (B., Z., P.,* C.), Murdoch Hugh M'Leod (P., C.), Campbell Macmillan (B.), John Hart M'Nicol (B., P.), William Aubrey Layard Marriott (P.), John Park Mathie (Z.*), Osborne Henry Mayer (B.), Donald Meek (C.), Angus Millar (B., Z., P.), John M'Intosh Morgan (Z.), Hyacinth Bernard Wenceslaus Morgan (B., P.), Findlay Murchie (P., C.), Frederick Lewis Napier (B.), William Niccol (B., P.), Charles Mill Nicol (Z., C.), Arthur Poole (B.), Rober Charles Robertson

(C.), Hugh George Robinson (B., P.), Joseph Henry Napoleon Felix Savy (B., P.), James M'Alpine Scott (B., P.), John Livingstone Scott (Z.), John M'Naught Scott, M.A. (B., P.*), Allan Semple (Z., C.), James Anstruther Smith (Z.), George Rae Spence (B., P.), Richmond Steel (B., P., C.), Alexander Stewart (C.), Arthur Ford Stewart (B., P.), Charles Lindsay Sutherland (B., P.), John Norman Sutherland (B.), David Campbell Suttie (B.,* P.), Robert Sweet (B., P., C.), Archibald Taylor (B., P.), Duncan Macnab Taylor (C.), Aidan Gordon Wemyss Thomson (B., P., C.), Edward Napier Thomson (B.), James Lachlan Ure (B.,* C.*), John Cuthbertson Walker (Z., C.), William Samuel Waterhouse (Z.), Harold Edward Whittingham (B., P.), Henry Joseph Windsor (Z.,* C.) John Youngson Wood (B.), David Yellowlees (B., P.*), and Douglas Young (B.,* P.).

Women.—Christina Barrowman (B., Z.), Margaret Baird Sproul Darroch (P.), Louisa Emma Dodge (B., Z.), Florence Ann Gallagher (B., Z.), Euphemia Adamson Hay (P., C.), Honoria Somerville Keer (P., C.), Alice Hilda Macalpine (P., C.), Agnes Mary M'Michael (B., Z.*), Mary Cochran Mitchell (P.*), Margaret Muir (P.), Mary Amelia Pillet (B., Z.), Jemima Wallace (P.), and Ethelwyn Mary Walters (P., C.).

The following have passed the second professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics):—

Wallace Wright Adamson (M.), Alexander Anderson (M.), David Arthur, B.Sc. (M.), Robert Inglis Binning (M.), James Nimmo Brown, M.A. (A., P., M.), William Brown, M.A. (M.), Murdo Buchanan (P., M.), James Cairncross (M.), John Paterson Carmichael (P.), Matthew Ignatius Thornton Cassidy (A., P.*), Alexander Johnston Couper (M.), James Cowie Dick (A.), John Alexander Doctor (M.), Arthur Drummond Downes, M.A. (A., P.*), William Hunter Duncan (A.) Allan Dunsmuir (M.), Alexander Wylie Eadie (A., P., M.), Archibald Fairley (M.), William Miller Fairlie (A.), Thomas Forsyth (A.), John Fotheringham (A., P.), George Muir Fraser (A.), Samuel Nicol Galbraith (M.), David Gibson (P., M.), Robert Govan (A., P., M.), Thomas Purdie Grant (M.), David Hamilton (A.), John Mitchell Henderson (A.), Alexander Mills Kennedy (P.), Charles Lawson Kerr (A., P.), George Ligertwood (A.), Daniel Conway M'Ardle (P., M.), Peter Cunningham M'Arthur, M.A. (P., M.), Alexander Macphail Macdonald (M.), Alexander Tulloh Inglis Macdonald (A.,* P.,* M.), James M'Donald (M.), John Robert M'Gilvray (A.), Neil MacInnes, M.A. (P.), Joseph Bogue Mackay (A., P.), Allison David M'Lachlan (M.), Donald Cameron MacLachlan (A.), Donald Irvine M'Naughtan (A., M.), David Manson (A., P., M.), Isa Carswell Marshall (M.), James Hogg Martin (M.*), William Matheson (M.), Horatio Matthews (A., P., M.), William Spence Melville (M.), John Clark Middleton, M.A. (A., P.,* M.), John Wilson Miller (M.*), Thomas Miller (A., P.,* M.), Hugh Morton (M.), James Muir (P., M.), Robert Charles Muir (A.), John Oswald (A.), Ralph Montgomery Fullarton Picken (A., P.*), Daniel M'Kinlay Reid (A.), Murdoch Mann Rodger (A.), Thomas David Coulthard Ross (A., P.), John Smith, M.A. (P.), James Alexander Stenhouse (P.), Campbell Kay Stevenson (M.*), Lawrence Storey (M.), John Martin Taylor (A., M.), Robert Scott Taylor (M.), David Alexander Thomson, M.A. (A.,* P.,* M.*), Hugh Johnstone Thomson (M.*), John Archibald Thomson (M.), John Morris Walker (A.), Thomas Charles Dalrymple Watt (A., P.), John Weir (A., P.), Hugh White (M.), Frank Ritchie Wilson (P.), and Matthew Young (M.*).

Women.—Martha Maclean Buchan (A., M.), Margaret Gardner Forrest (A. P.), Ella Smith Hill, M.A. (M.), Annie M'Crorie (A., P., M.), Janet Annie Macvea (A.), Jane Isabel Robertson, M.A. (M.), Jeanie Hinshaw Stewart (M.).

The following have passed the third professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (P., Pathology; M., Medical Jurisprudence and Public Health):—

George Victor Anderson (P., M.), John Anderson, M.A., B.Sc. (P., M.), Andrew Hamilton Arnott (P.), George Thomson Bogie (P.), George Campbell (P., M.), Henry Howard Christie (M.), John Sawers Clark, M.A. (M.), Arthur Muir Crawford (M.), Weir Burns Cunningham (M.), Harold Windley Dempster (M.), Robert Donald, (P., M.), Richard John Driscoll (M.), Ernest Milne Eaton (M.), Edward John Fitzgerald (M.), Thomas Henderson Forrest (M.), James Wilfred Georgeson (P., M.), William Gilbert (M.), William Towers Hardie (P.), Saul Hyman Harris (P.), Lawrence Hislop (P.), Percy James Kelly (M.), James Dunlop Kidd (P.,* M.), Robert Wright Leckie (P., M.), Thomas M'Cririck, M.A., B.Sc. (P., M.), David MacDonald (P., M.), William Ferguson Mackenzie (M.), Norman Smith MacNaughtan (P.), Charles James Colquhoun Macquarie (M.), William Miller (P., M.), Peter Mitchell, M.A. (M.*), John Sharp (P., M.), James Charles Donaldson Simpson (M.), John Macgregor Smith (P.), Thomas Baillie Smith (M.) Charles Samson Thomson (M.), Martin Turnbull (P., M.), Moses Youdelevitz (M.), and John Young (Mount Vernon) (P., M.).

Women.—Jeannie Montgomery Andrew (P., M.), Annie Rennie Hird (P., M.), Rose Isobel Hudson (P.), Florence Mann (P., M.), Jessie Deans Rankin, M.A., B.Sc. (P.), and Vera Dagmar Reis (P., M.).

Under the regulations for M.B., C.M., Robert Stewart M'Kim, M.A., passed with distinction in Forensic Medicine.

* Passed with distinction in the subjects indicated.

FOREIGN UNIVERSITY INTELLIGENCE.

Gratz: Dr. Anton Bleichsteiner has been promoted to an Extraordinary Professorship of Odontology.—*Groningen:* Dr. Noordenbos has been recognised as *privat-docent* of Surgical Anatomy.—*Kazan:* Dr. Nèbolinboff has been promoted to an Extraordinary Professorship of Forensic Medicine. Dr. Tonkoff of St. Petersburg has been appointed to the chair of Anatomy in succession to the late Professor Fortunatoff.—*Rome:* Dr. Amico Bignami has been appointed Extraordinary Professor of General Pathology.—*Turin:* Dr. Mario Donati has been recognised as *privat-docent* of External Pathology.

ST. BARTHOLOMEW'S HOSPITAL.—The following entrance scholarships have been awarded:—Senior entrance scholarships in science, value £75 each: J. L. Joyce and R. Crawford. Junior entrance scholarship in science, value £150: K. Bremer and W. C. Dale (equal). Preliminary scientific exhibition, value £50: R. Pearse. Jeaffreson exhibition in general education, value £20: C. A. Prada. Shuter scholarship, value £50: R. B. Seymour Sewell.

MIDDLESEX HOSPITAL MEDICAL SOCIETY.—Dr. H. Campbell Thomson presided at the opening meeting of this society on Oct. 12th in the large lecture theatre of the hospital school when an address was delivered by Dr. J. F. Payne dealing with the Past Physicians of the Middlesex Hospital. At the conclusion of the address Dr. C. E. Lakin proposed, and Mr. H. W. Acton seconded, a vote of thanks to Dr. Payne, which, on being put to the meeting by Dr. Campbell Thomson, was carried with acclamation and suitably acknowledged.

LEICESTER INFIRMARY.—At the quarterly meeting of the board of governors of the Leicester Infirmary held on Oct. 11th a vote of condolence was passed with the family of Mr. T. A. Wykes who for over 40 years discharged the duties of secretary to the institution with great fidelity and energy. On the proposition of Alderman Wood the Countess of Wilton and Mrs. Edmund Herbert were elected life governors. The report of the house governor showed that for the nine months ending September last the number of patients treated in the in-patients' department reached 2079. If the rate of increase should continue to the end of the year it will mean an increase of in-patients for the year of over 400. In the out-patient department 28,163 patients had been treated during the nine months. The honorary medical staff had drawn attention to the fact that it did not make for the health of the children in the Children's Hospital to have them placed two in a bed—a method that had been resorted to in urgent cases. The board, said the report, recognised that this was a faulty procedure and they would have to decide whether the hospital should be enlarged or the work curtailed and made commensurate with the number of beds.

THE MILAN INTERNATIONAL EXHIBITION, 1906.—We have been requested by Mr. Arthur Serena, honorary executive commissioner for Great Britain at the Milan Exhibition of 1906, to state that H.M. the King of Italy will offer prizes to the extent of £1600 to exhibitors. This amount will be divided as follows: (1) a prize of £200 for automatic safety couplings for railway rolling stock; (2) a prize of £200 for the best method of testing high-voltage electric currents without danger to the operator; (3) a prize of £400 for the best and most original exhibit of machinery or manufacturing process; (4) a prize of £200 for the best established method of distributing healthy and pure milk in centres of population; (5) a prize of £400 for the best type of popular dwelling adapted to the climate of Northern Italy; and (6) a prize of £200 for motor boats. In addition to the foregoing there will be given a national prize of £200 to the public institution or private society which during the last ten years has been most successful in the work of reclaiming waste lands in mountainous districts and in the improvements of pasturage. These special inducements to exhibiting will doubtless possess attraction for British manufacturers, inventors, and others who should without loss of time address themselves for further particulars to the honorary Executive Commissioner of the British Section, 1 and 2, Oxford-court, Cannon-street, London, E.C.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of the above society was held on Oct. 11th, Mr. Willett, senior Vice-President, being in the chair. The death of Mr. Christopher Heath, late president of the society, was reported. Mr. Heath was elected a member in 1874, director in 1879, vice-president in 1892, and president in 1900. During his term of office as president Mr. Heath was only absent on two occasions from the meetings of the society. The following proposition was moved from the chair and a copy was sent to Mrs. Heath, together with the assurance of the

sincere sympathy of the court of directors with the family of Mr. Heath in their bereavement:—

The Court of Directors of the Society for Relief of Widows and Orphans of Medical Men hereby records its great regret at the death of Mr. Christopher Heath who had held the office of president since the year 1900 and who had for many years taken great interest in the society's welfare.

Three other deaths among members were also reported. The death of a widow was announced who had received a total sum of £1295 in grants, the amount of subscriptions paid by her husband having been £21. Two new members were elected. The sum of £603 was voted as a Christmas present to be distributed among the annuitants of the charity. It was also decided that in future the quarterly courts should be held at 5.30 P.M. instead of at 8.30.

"NO DRINKS BETWEEN MEALS."—The meeting at the Mansion House, E.C., in connexion with the Semi-Teetotal Pledge Association, on Tuesday next, Oct. 24th, at 4 o'clock, to be presided over by the Right Hon. the Lord Mayor, will be addressed by the Right Hon. Lord Kinnaird, the Right Rev. the Lord Bishop of Kensington, Sir C. Ernest Tritton, Bart., M.P., His Honour Judge Rentoul, K.C., LL.D., Major-General Henry Mackinnon, C.V.O., C.B., D.A.F., and the Rev. F. S. Webster, M.A. Tickets can be obtained from the secretary, 4, The Sanctuary, Westminster, S.W.

WORKHOUSE INFIRMARY NURSING ASSOCIATION.—The following resolution has been forwarded by the Workhouse Infirmary Nursing Association to the Prime Minister and to the President of the Local Government Board:—

In view of the increasing number of sick cases in Poor-law institutions, this association begs respectfully to draw attention to the extreme importance of the appointment on the Royal Commission of at least one woman who possesses a wide practical acquaintance with the working of the Poor-law in relation to sick and infirm inmates in both large and small workhouses.

(Signed) HELENA.
MERIEL S. TALBOT, Vice-President and Chairman of the Executive Committee.
LOUISA TWINING, Vice-President.
J. WILSON, Hon. Treasurer.

THE NEED FOR ISOLATION HOSPITALS.—A severe, though fortunately limited, outbreak of diphtheria has occurred at Broadoak, near Shrewsbury. In all there were ten cases and six of these proved fatal. In one house there were seven cases, with four deaths; in another house there were three cases and two deaths. The source of the infection appeared a girl who went home in good health from a situation on August 21st. About Sept. 11th she complained of a sore throat. She saw a medical man on Sept. 28th, when sundry obvious cases of diphtheria had developed, and he then considered that her illness must have been a very mild attack of diphtheria. The medical officer of health, Mr. M. Gepp, gave it as his opinion that the outbreak could not be traced to defective milk-supply, to defective sanitation, or to school attendance. If an isolation hospital had been immediately available the results might have been less serious. The medical man in charge of the cases had inquired whether he could not have a supply of antitoxin and Mr. Gepp had been obliged to reply that it had been officially laid down that it was not within the province of a district council to supply antitoxin. The rural district council, at a meeting held on Oct. 4th, agreed to approach the Local Government Board on the subject of having it in its power to provide antitoxin. Mr. Gepp informs us that the outbreak did not spread beyond the two houses originally affected and no further cases have occurred. All the surviving patients are well or convalescent. The health authorities are, we think, to be congratulated on the limitation of the epidemic.

THE NELSON CELEBRATIONS AND THE CENTENARY OF TRAFALGAR.—The authorities of the British and Foreign Sailors' Society have organised an entertainment to take place at the Royal Albert Hall on Oct. 21st which will celebrate the decisive battle fought between ourselves and our neighbours across the Channel on Oct. 21st, 1805. A significant feature of the proceedings will be the absence of any spirit of boastful rejoicing, and indeed the afternoon demonstrations will be closed by the hoisting of the Union Jack and the Tricolour and the singing of the two National Anthems. Miss Weston's Naval Boys' Brigade from Portsmouth will take a prominent part in the proceedings and Mrs. Tree will recite Rudyard Kipling's "Recessional." Lord Brassey, supported by some of the admirals of the Royal Navy and mayors of various corporations in their chains of office, will preside. On the platform will be the oak timber taken from the *Victory* after her accident and presented by the Lords of the Admiralty to the British and Foreign Sailors' Society. On it are the words in faded gilt "Here Nelson Died." By its side will be a flag-pole and at the hour when, 100 years ago, Nelson breathed the words "Thank God, I have done my duty," and then expired in the *Victory's* cockpit, an English boy will hoist the Union Jack half-mast high. After a brief silence Mr. Ben Davis will sing the "Death of Nelson." The flag will then be mast-headed. There will also be a cinematograph exhibition of our navy, 1805–1905, by Mr. Alfred J. West, F.R.G.S. In the evening there will be a Nelson centenary concert at which some prominent *artistes* will assist. Tickets may be obtained at prices from 1*s.* upwards. Donations should be sent to the Nelson Centenary Memorial Fund, Bank of England, London. The address of the British and Foreign Sailors' Society is Passmore Edwards Sailors' Palace, 680, Commercial-road, London, E.

EGYPTIAN VITAL STATISTICS.—The statistical branch of the Egyptian Sanitary Department has issued some interesting, if rather belated, information referring to the triennium 1896–98 and dealing with the mortality of foreigners residing in Cairo during that period. The total number of deaths in the three years was 2549, giving a rate of 26·10 per 1000 living per annum. The principal cause of mortality was returned as gastro-enteritis; it was responsible for 3·44 deaths per 1000 per annum but the incidence was mainly amongst the young, 87 per cent. of the fatal cases occurring in children not more than five years of age. Diseases of the nervous system caused 3·43 deaths per 1000. Diseases of the respiratory system (not including pneumonia) came next, the death-rate being 3·13 per 1000. The rates per 1000 per annum of the remaining fatal disorders were in their order of frequency as follows: "developmental" diseases, 3·02; tuberculosis, 2·46; pneumonia, 1·72; diseases of the circulatory system, 1·71; diseases of the generative and urinary systems, 1·02; diseases of the digestive system, 0·73; diphtheria and croup, 0·65; violence, 0·56; diseases of the liver, 0·55; dysentery, 0·54; typhoid fever, 0·47; small-pox, 0·46; cholera, 0·46; other infectious diseases, 0·37; measles, 0·23; malaria, 0·23; puerperal fever, 0·10; poisoning, 0·09; parasitic diseases, 0·06; relapsing fever, 0·03; whooping-cough, 0·03; typhus fever, 0·02; scarlet fever, 0·01; other diseases, 0·35; and diseases unknown, 0·23. The death-rate from all causes in children aged five years and under was 11·20 per 1000 per annum. Above that age it was consequently only 14·9 per 1000. During the triennium the deaths of 1432 males and 1117 females were reported, the rates per 1000 per annum being respectively 28·38 and 23·66. From this it would appear that women have a better prospect of life in the Egyptian capital than men. The greater exposure of the latter to climatic vicissitudes may possibly be the cause of the disproportion.

PRESENTATION.—Miss Enid Marian Smith, M.B., B.S. Lond., the daughter of Sir George and Lady Smith of Truro, was on Oct. 9th presented with a camera by the members of the Zenana Working Party and other supporters of foreign missions on the occasion of her leaving Truro to take up medical mission work in the Mysore mission in India.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Nouveau Traité de Médecine et de Thérapeutique, publié en Fascicules, sous la Direction de MM. P. Brouardel et A. Gilbert. VI. Maladies Exotiques. Par MM. A. Netter, Mosny, Deschamps, Thoinot, Wurtz, Vaillard, Hallopeau, Jeanselme, Guiart, Lancereaux, et Richardière. Price Fr 8.

CASSELL AND COMPANY, LIMITED, London, Paris, New York, and Melbourne.

Materia Medica and Therapeutics: An Introduction to the Rational Treatment of Disease. By J. Mitchell Bruce, M.A., LL.D. (Hon.) Aberd., M.D. Lond., F.R.C.P. Lond., Consulting Physician to Charing Cross Hospital and to the Hospital for Consumption, Brompton. New and enlarged edition, revised throughout, and containing the Indian and Colonial Addendum to the British Pharmacopœia. Forty-seventh thousand. Price 7*s.* 6*d.*

CHAPMAN AND HALL, LIMITED, London.

My Life: A Record of Events and Opinions. By Alfred Russel Wallace, Author of "Man's Place in the Universe," "The Malay Archipelago," "Darwinism," &c. With facsimile letters, illustrations, and portraits. Two volumes. Price 25*s.* net.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

A Text-book of Materia Medica for Students of Medicine. By C. R. Marshall, M.D., Professor of Materia Medica and Therapeutics in the University of St. Andrews. Price 10s. 6d. net.

COLLINGRIDGE, W. H. AND L., 148 and 149, Aldersgate-street, E.C.

"Farm and Garden" Handbooks. No. 8. Dairy Cows and the Dairy. By John Walker, Author of "Pigs for Profit," &c. Edited by T. W. Sanders, F.L.S., Editor of "Farm and Garden." Illustrated. Price 1s. net.

CROWELL, THOMAS Y., AND CO., New York.

Vital Questions. By Henry Dwight Chapin, M.D. Price, cloth, $1.00 net.

FISCHER, GUSTAV, Jena.

Semmelweis' Gesammelte Werke. Herausgegeben und zum Theil aus dem Ungarischen übersetzt von Dr. Tiberius von Györy, Privatdozent an der Universität zu Budapest. Mit Unterstützung der Ungarischen Akademie der Wissenschaften. Mit dem Portrait von Semmelweis und einer Abbildung seines Grabmals. Price M.12.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, Exeter-street, Strand, W.C.

A Medical and Surgical Help for Shipmasters and Officers in the Merchant Navy; including First Aid to the Injured. By Wm. Johnson Smith, F.R.C.S., Principal Medical Officer, Seamen's Hospital, Greenwich. Third edition, revised. Price 6s.

HODGE, WILLIAM AND CO., Glasgow and Edinburgh.

Notable Scottish Trials Series. Trial of Madeleine Smith. Edited by A. Duncan Smith, F.S.A. (Scot.), Advocate. Price 5s. net.

HOMŒOPATHIC PUBLISHING COMPANY, 12, Warwick-lane, Paternoster-row, E.C.

Homœopathy Explained. By John Henry Clarke, M.D. Price 2s. net.

KEMPTON, HENRY, 13, Furnival-street, Holborn, E.C.

A Practical Treatise on Sexual Disorders of the Male and Female. By Robert W. Taylor, A.M., M.D., formerly Clinical Professor of Genito-urinary Diseases at the College of Physicians and Surgeons (Columbia University), New York. Third edition, thoroughly revised. Price 16s. net.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, E.C.

How to Live the Simple Life. By Calvin Pater. Price 1s. net.

LEWIS, H. K., 136, Gower-street, W.C.

A Guide to the Administration of Ethyl Chloride. By G. A. H. Barton, M.D., Anæsthetist to the North-West London Hospital, Throat Hospital (Golden-square), and Female Lock Hospital. Price 1s. 6d.

Manual of Operative Surgery. By John Fairbairn Binnie, A.M., C.M. Aberdeen, Professor of Surgery, Kansas State University, Kansas City. Second edition, revised and enlarged. Price 12s. 6d. net.

The Theory and Practice of Medicine. By Frederick T. Roberts, M.D., B.Sc., F.R.C.P., Fellow of University College, Emeritus Professor of Medicine and Clinical Medicine at University College, Consulting Physician to University College Hospital and to Brompton Hospital for Consumption and Diseases of the Chest. In two volumes. Tenth edition. Price 26s. net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

The Scientific Temper in Religion and Other Addresses. By the Rev. P. N. Waggett, M.A., of the Society of St. John the Evangelist. Price 4s. 6d. net.

The Diseases of Children, Medical and Surgical. By Henry Ashby, M.D. Lond., F.R.C.P., Physician to the Manchester Children's Hospital, Lecturer and Examiner in Diseases of Children in the Victoria University, and G. A. Wright, B.A., M.B. Oxon., F.R.C.S. Eng., Surgeon to the Manchester Royal Infirmary, Consulting Surgeon to the Children's Hospital. Fifth edition, thoroughly revised. Price 21s. net.

Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S., Fellow of the Royal College of Surgeons. Lecturer on Anatomy at St. George's Hospital Medical School. The drawings by H. V. Carter, M.D. Sixteenth edition. Edited by T. Pickering Pick, F.R.C.S., and by Professor Howden, M.A., M.B., C.M. Price 32s. net.

Select Methods in Chemical Analysis (Chiefly Inorganic). By Sir William Crookes, Hon. D.Sc. (Oxford and Dublin), F.R.S., P.P.C.S., P.P. Inst. E.E., Editor of "The Chemical News." Fourth edition, rewritten and enlarged. Price 21s. net.

Physical Chemistry and its Application to Medical and Biological Science. Being a Course of Seven Lectures delivered in the University of Birmingham. By Alex. Findlay, M.A., Ph.D., D.Sc., Lecturer on Physical Chemistry, University of Birmingham. Price 2s. net.

MACMILLAN COMPANY, New York. (MACMILLAN AND CO., Limited, London.)

Handbook of Physiology for Students and Practitioners of Medicine. By Austin Flint, M.D., LL.D., Professor of Physiology in the Cornell University Medical College, Consulting Physician to Bellevue Hospital, President of the Consulting Board of the Manhattan State Hospital for the Insane. Price 21s net.

METHUEN AND CO., 36, Essex-street, W.C.

An Elementary Text-book of Inorganic Chemistry. By R. Lloyd Whiteley, F.I.C., F.C.S., Principal of the Municipal Science School, West Bromwich. Price 2s. 6d.

REBMAN, Limited, 129, Shaftesbury-avenue, W.C.

Contributions to Clinical Surgery. By James Crawford Renton, M.D., F.F.P.S.G., Surgeon and Lecturer on Clinical Surgery, Western Infirmary, Glasgow, Examiner in Surgery in the University of Aberdeen. Price 6s. net.

SOCIETÀ EDITRICE LIBRARIA, Via Antonio Kramer, 4, Milan.

Igiene Navale. Manuale per Medici di Bordo, Ufficiali Navigantie Costruttori Navali. Del Dott. C. M. Belli, Capitano Medico nella R. Marina, e Libero Docente d'Igiene nella R. Università di Padova. Price L.12.50.

SPRINGER, JULIUS, Monbijouplatz, 3, Berlin.

Beiträge zur Ohrenheilkunde. Festschrift gewidmet August Lucae, zur Feier seines Siebzigsten Geburtstages. Mit einer Heliogravüre. Price M.12.

STUBER, A. (C. KABITZSCH), Würzburg.

Verhandlungen der Deutschen Laryngologischen Gesellschaft auf der I. Versammlung zu Heidelberg, Pfingsten 1905. Herausgegeben im Auftrage des Vorstandes vom Schriftführer Dr. med. Georg Avellis, Frankfurt a.M. Price M.1.50.

Verhandlungen des Vereins Süddeutscher Laryngologen, 1905. Herausgegeben im Auftrage des Vereins vom Schriftführer Dr. med. Felix Blumenfeld, Wiesbaden. Price M.3.

TAYLOR AND FRANCIS, Red Lion-court, Fleet-street, E.C.

Calendar of the Royal College of Surgeons of England. August 1st, 1905. Price 1s.

UNIVERSITY OF LONDON (THE FINANCIAL SECRETARY), South Kensington, S.W.

The Calendar for the Year 1905-1906. Vol. I. Price 5s. net. Postage 4d. Vol. II. (Internal). Price 5s. net. Postage 5d. Vol. III. (External). Price 2s. 6d. net, post free.

Pamphlet relating to the Constitution and Officers of the University. Price 1s., post free.

Faculty Pamphlets (External and Internal). Price 1s. each, post free. Theology, Arts (including Pedagogy), Laws, Music, Medicine, Science (including Agriculture and Veterinary Science), Engineering, and Economics.

Matriculation Pamphlet. Price 6d., post free.

VERLAG DER KÖNIGL. AKADEMIE DER WISSENSCHAFTEN, Berlin. (In Commission bei GEORG REIMER.)

Das Grosshirn der Papageien in Anatomischer und Physiologischer Beziehung. Von Dr. Otto Kalischer, in Berlin. Aus dem Anhang zu den Abhandlungen der Königl. Preuss. Akademie der Wissenschaften vom Jahre, 1905. Price not stated.

VOGEL, F. C. W., Leipzig.

Hyperämie als Heilmittel. Von Professor Dr. August Bier, in Bonn. Zweite umgearbeitete Auflage. Price M.12.

WALTER SCOTT PUBLISHING CO., Limited, London and Felling-on-Tyne.

Physical Education of the Young; or, the Nurture and Management of Children, founded on the Study of their Nature and Constitution. By Samuel Smiles, author of "Self-Help," &c. Edited, with additions, by Sir Hugh Beevor, Bart., M.D., F.R.C.P. Price 2s. 6d.

WELLS GARDNER, DARTON, AND CO., Limited, 3, Paternoster-buildings, E.C., and 44, Victoria-street, S.W.

A Healthy Home and How to Keep It. By Florence Staepoole. Parts I. and II. Price 4d. each.

WIEGANDT, C., Estabelecimento Graphico, Pará, Brazil.

Memorias do Museu Goeldi (Museu Paraense) de Historia Natural e Ethnographia. IV. Os Mosquitos no Pará. Reunião de quatro trabalhos sobre os Mosquitos indigenas, principalmente as especies que molestam o homem. Pelo Professor Dr. Emilio Augusto Goeldi, Director do Museu. Com 144 Figuras no texto e 5 estampas chromolithographicas. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BULKELEY, L. A. H., M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

DINGLE, PERCIVAL ALFRED, L.R.C.P. Lond., M.R.C.S. Eng., has been appointed House Physician to the Royal Hospital for Diseases of the Chest, City-road, E.C.

EDMISTON, J. F., M.B., Ch.B. Liverp., has been appointed House Surgeon to the David Lewis Northern Hospital, Liverpool.

GUSH, H. W., M.B., Ch.B. Edin., has been appointed House Physician to the David Lewis Northern Hospital, Liverpool.

HAWESLEY, W. L., M.B., Ch.B. Liverp., has been appointed House Physician to the David Lewis Northern Hospital, Liverpool.

LAURENCE, G., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the David Lewis Northern Hospital, Liverpool.

LISTER, T. D., M.D., M.R.C.P. Lond., has been appointed Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead and Northwood.

LLOYD, G. E., M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

LUNN, W. B. C., has been appointed Accident Room House Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

M'BEAN, S. L., M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

MCDONALD, M.B., B.S. Durh., has been appointed Junior House Physician to the Royal Infirmary, Newcastle-upon-Tyne.

MALLAM, H. G., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Medical Officer to the Brighton, Hove, and Preston Dispensary.

PARSONS, WALTER BROCK, M.R.C.S., L.R.C.P. Lond., has been appointed Second Honorary Anæsthetist to the North-West London Hospital.

REAM, H., M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

SAUNDERS, ERNEST GEORGE SYMES, M.D., C.M. Aberd., has been appointed Assistant Surgeon to the Royal Albert Hospital, Devonport.

SWAN, R. H. J., M.B., M.S. Lond., F.R.C.S. Eng., has been appointed Third Assistant Surgeon at the Cancer Hospital.

YORKE, C., M.B., Ch.B. Liverp., has been appointed House Surgeon to the David Lewis Northern Hospital, Liverpool.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM CITY ASYLUM, Rubery Hill, near Birmingham.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, &c.

BOURNEMOUTH, ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BRADFORD ROYAL INFIRMARY.—House Surgeon, also House Physician, both unmarried. Salary £100 per annum, with board and residence.

BRISTOL ROYAL INFIRMARY.—House Surgeon. Salary £100 a year, with apartments, board, and laundry.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months, renewable. Salary £60 per annum, with rooms, board, washing, and attendance.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Assistant Physician. Also Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

GLASGOW, VICTORIA INFIRMARY.—Surgeon, also Assistant Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Surgeon, unmarried, for six months. Salary £20, with board and residence.

LEEDS GENERAL INFIRMARY.—Laboratory Curator. Salary £200 per annum.

LEICESTER POOR-LAW INFIRMARY, North Evington.—Resident Assistant Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, and washing.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—Lectureship in Anatomy.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Assistant Physician.

NOTTINGHAM GENERAL HOSPITAL.—House Surgeon. Salary £100, rising to £120, with board, lodging, and washing.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PORTSMOUTH (ROYAL) HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and laundry.

QUEEN'S JUBILEE HOSPITAL, Earl's Court, S.W.—Resident House Physician. Also Resident House Surgeon, both for six months. Salaries at rate of £50 per annum, with board and lodging.

RYDE UNION.—Medical Officer of Health and District Medical Officer. Salary £95 per annum, with fees.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Clinical Assistants.

TEIGNMOUTH HOSPITAL, S. Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Amersham in the county of Buckingham, and at Galashiels in the county of Selkirk.

Births, Marriages, and Deaths.

BIRTHS.

SWAYNE.—On Oct. 9th, at Mathon House, St. Paul's-road, Clifton, Bristol, the wife of Walter C. Swayne, M.D. B.S., of a son.

WHITELEY.—On Oct. 11th, at Britannia-road, Fulham, S.W., the wife of D. F. Whiteley, L.R.C.P. Lond., M.R.C.S., of a daughter.

MARRIAGES.

HAWARD-MANN.—On Oct. 12th, at St. John's, Ealing, by the Rev. J. J. Summerhayes, M.A. (vicar), assisted by the Rev. A. W. Allcock, M.A., Walter Haward, M.B., son of the late H. T. Haward, of Ealing, to Louisa Ayton (Lulu), second daughter of the late James Aston Mann and of the late Mrs. Mann, of Ealing.

KNOBEL—OMMANNEY.—On Oct. 11th, at St. Mary's Church, North Mymms, Herts, William Bernard Knobel, M.A., M.D. Cantab., M.R.C.S., L.R.C.P., to Gladys Maude, only daughter of Charles Henry Ommanney, C.M.G., of Abdale, Hatfield, Herts.

DEATHS.

CADELL.—On Oct. 9th, at Edinburgh, Martha Georgina Isabella Cadell, M.B., C.M., late of Talbot-road, Bayswater, London.

COLLIER.—On Oct. 13th, at High-street, Oxford-road, Manchester, Joseph Collier, F.R.C.S.

HALSE.—On Oct. 12th, Charles S. Halse, M.D., late of New Bridge-street, E.C., and Suffolk-street, Pall Mall, aged 72 years.

JONES MORRIS.—On Oct. 15th, at Beaumont-street, W., William Jones Morris, M.R.C.S., &c., of Is y Coed, Portmadoc, aged 67 years.

SMITH.—On Oct. 12th, Lieutenant-Colonel Maurice H. Smith, late Indian Medical Service, aged 55 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths

Notes, Short Comments, and Answers to Correspondents.

TRUTH AND QUACKS.

OUR energetic contemporary *Truth* is a veritable *Malleus Idiotarum*, for its columns smite the quack in a most wholesome manner. In its issue of Oct. 5th there are some most admirable remarks upon that essentially gross piece of deception known as the Viavi Company. A Viavi lady recently prescribed for the medical officer of health of the Transvaal with the result that she was indicted under a Transvaal ordinance for unlawfully acting as a medical practitioner and was fined £25. It is stated that an appeal is pending. The Transvaal, unlike our own favoured land of freedom, is so arbitrary that it not only requires both physicians and druggists to be registered but also precludes any unregistered person from practising. Some day, perhaps, that will be the law here. *Truth* next refers to "that disreputable rascal" "Professor" Richard and the way in which newspapers aid and abet him in nefarious practices by publishing his advertisements. Another quack concern to which our contemporary refers is the Cartilage Company of Rochester, N.Y. The advertisement of this swindle is to be seen in many magazines and the whole business is, without doubt, to use our contemporary's words, "the rankest of humbug and quackery." Another establishment to which *Truth* takes exception is the "Weidhaas Institute," which the other day held a function to which they managed to allure no less a person than Dr. Macnamara, M.P. We agree with *Truth* in thinking that an M.P. has no right to lend his name and his presence to supporting an institute of this kind. For to quote again from *Truth*, "Whatever the merits of the Weidhaas treatment itself, whatever the proportion of cures to failures among the patients, the primary object of all this expensive machinery is to extract by the most scientific process the largest amount of cash from the pockets of credulous or ignorant persons, or persons reduced by disease to such a plight that they are ready to try anything they hear of for the chance of a restoration to health."

A POINT IN LOCAL ANÆSTHESIA.

To the Editors of THE LANCET.

SIRS,—A short time ago I performed castration on a man for chronic intractable hydrocele. The patient was 60 years of age and the subject of chronic bronchitis. In the circumstances I did not consider a general anæsthetic would be advisable and so performed the whole operation under local anæsthesia induced by repeated injections during the operation of a solution made up of eucaine, 1 in 500; adrenalin, 1 in 100,000; sod. chlor., 1 in 1000. I was successful in preventing the patient feeling any pain and used in all three fluid ounces of this solution. The wound healed uneventfully but within 24 hours I noticed a discolouration of the skin of the lowest part of the scrotum and eventually a slough of about the size of a shilling, involving the whole thickness of the scrotal tissue, formed in the centre of this patch—in the most dependent part of the scrotum. This came away, leaving an ulcer which healed under suitable treatment. The questions I should like to ask your readers are: Could this slough have been caused by an accumulation of the anæsthetic at this point leading to a strangulation of the circulation by the adrenalin? If so, could this accident be avoided in future? The part affected had not been clamped or in any way roughly handled during the operation. Did I use too much anæsthetic?

I am, Sirs, yours faithfully,

Leeds, Oct. 4th, 1905. R. MACDONALD LADELL, M.B., Ch.B. Vict.

"DOIL."

To the Editors of THE LANCET.

SIRS,—"Enquirer" asks for the derivation and original meaning of the word "doil," used in Norfolk and applicable to a roadway. The word is not given in the "New English Dictionary"; it is probably a local variant for one of two words. (A) "Dalle" of French origin, meaning either (1) a flat slab of stone or other material suitable for pavement; and (2) a second meaning ("New English Dictionary") is the name given by the Hudson Bay Company employés to rapids where the river is compressed into a narrow gulley. Probably the second sense is a distinct word and the same as an old French word "dalle," a conduit or pipe for water, still used in technical and local language in the English word "dale" (pump dale). (B) "Dool"—dool—dole, corresponding to early Frisian "d'l," a landmark, stone, or mound used as such. Low German "Dôle," a grave with a heap of earth over it (nothing to do with dolmen, which is Celtic); the notion of measuring out into equal parts run through all the variations of the word "dole," not to be confused with "dole" (grief) which is of Latin origin.

I am, Sirs, yours faithfully,

Oct. 14th, 1905. GRAMMARIAN.

To the Editors of THE LANCET.

SIRS,—In reply to "Enquirer" as to the derivation and original meaning of the word "doil," referring to a road, I think the word he asks about must be "dole," of which a variant spelling is "dool." It has also been spelt "dale," "dael," and "dal." Skeat says that "dole"

is a doublet of "deal." It means a parcel of land and thence a boundary or landmark, as in the words, "Accursed be he ..... who removeth his neighbour's doles or markes." It also signifies a balk or unploughed ridge dividing ploughed portions of a field. "Dole" has also been used provincially to denote a low, flat place, and "dole-moor" to denote a large unenclosed common. The Dutch word "doel" means aim, mark, or goal. I do not think it has any connexion with "dal" or "dol," meaning dale or dell, nor with "dol" or "taol," meaning table, used, it is said, in the word "dolmen," a stone table. Some more light might be thrown on the matter by consulting "The Vocabulary of East Anglia, Norfolk, and Suffolk," two volumes, by John Forby, 1830. I am indebted to "The Encyclopædic Dictionary" (Cassell), to the "Standard Dictionary" (Funk and Wagnall), and to "Chambers's Twentieth Century Dictionary" for the above information. There is a word generally used in Norfolk, sounding somewhat similarly, but it means "house flannel" and is derived, I believe, from the Dutch "dwasl," meaning towel. The word might have some connexion with the German "dohle," meaning drain, sink, or sewer.

I am, Sirs, yours faithfully,

Oct. 16th, 1905. LOGOMACHIST.

To the Editors of THE LANCET.

SIRS,—If "Enquirer" will communicate with me I may be able to assist him. I am, Sirs, yours faithfully,

ARTHUR WADDELL.

The Hermitage, Potters Bar, S.O., Middlesex, Oct. 14th, 1905.

*** We have received a letter from "Enquirer," who thinks that the word may be written, judging from its pronunciation, "doit," and not "doil." The sense and derivation of "doit" are perfectly well known and a life-long resident in Norfolk tells us that he never heard the word used save to mean a very small coin.—ED. L.

MOTOR-CARS FOR MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—I read in THE LANCET of Oct. 7th a letter from Dr. G. M. Lowe on the subject of Motor-cars for Medical Men. He paints therein a glowing picture of the electric car and lauds his own particularly. I gather from his letter that he has just got it. I should be interested to hear his opinion in a year's time and, better, in two years' time. His experience of steam cars coincides with my own, even to the termination—flames and destruction. I have, however, an advantage over him in that I have gone through the experience of Fisk tubeless tyres. I think he will need more than one set per annum for his electric car as I found they soon became porous, punctures were difficult to mend, and gashes impossible. I doubt very much if Dr. Lowe will manage to keep a piece of complicated electrical machinery in order without a skilled mechanic unless he understands electric motors thoroughly. I think he will find that his accumulators will not last more than a year and as they wear out will not carry him 40 miles; and also I fear his boxed-up system of lubrication will soon fail, his ball bearings wear, and the balls break and the ball races break also. Petrol cars are noisy and evil-smelling compared with electric ones, but they are simple and easily managed and kept. My six horse-power car is rather more than two years old, has run 12,000 miles (chiefly in bad weather, as in fine I bicycle as much as possible), has done my town and country work, my holiday tours and pleasure spins, is "kept" by a boy (wages 5s. per week), has cost me £170 odd (including wages, licences, stables, &c.), and I am told by the overhaulers a month ago that it is good for at least two years longer. I am afraid I am too late to exhort Dr. Lowe to "bear the evils that he has rather than fly to others that he knows not of." I am, Sirs, yours faithfully,

M.B.

THE LONDON TEMPERANCE HOSPITAL AND TEMPERANCE STATISTICS.

To the Editors of THE LANCET.

SIRS,—The suggestion in your correspondent's letter that the low rate of mortality in the London Temperance Hospital is due to the fact that so many of its patients are superior in physical stamina and habits of life to the average body of patients in general hospitals is of very limited application. The most abstemious and respectable persons may become the subjects of the severest ailments and non-abstainers of every grade find their way in large numbers into our wards. Our moribund cases are frequent and our children's ward swells our death-list with a heap of little ones whose fate is practically sealed before they come into our hands.

Before the London Temperance Hospital was opened in 1873 there was a general opinion that in certain diseases the use of some alcoholic liquor was essential to successful treatment and that in most cases, if not in all, recovery was hastened by the use of such fluids. The practice corresponded with the theory, and as the practice admitted of no exceptions it was impossible to learn how far it was scientifically just or unjust. To determine this point it was necessary that the use of alcohol should be omitted from the ordinary treatment of disease; in other words, that the prescription of alcohol should be made the exception and not the rule. Your correspondent hints at the concurrent trial of both systems in the same hospital and I can assure him that such an arrangement would have been welcomed 30 years ago by the friends of temperance. No proposal of the kind emanated from those who would have been responsible for giving it effect and, failing this, nothing was left but the establishment of an institution in which, with competent administration, it might be discovered whether, under similar conditions of hospital treatment, the use of alcohol could be, as a general rule, safely and wisely dispensed with.

The experience of the London Temperance Hospital during 32 years is the record of such an investigation and the answer to the question proposed. I am, Sirs, yours faithfully,

DAWSON BURNS, D.D.,

Oct. 12th, 1905. Honorary Secretary to the London Temperance Hospital.

J. J. W.—B should have come to a friendly arrangement with A as to whether he was to continue treatment or not, and A should have met B in a similar spirit. The patient's view is not stated, but if the patient desires the medical man who first saw him to remain as his adviser during this illness the fact should influence both A and B. There is no hard and fast rule in such a situation when the medical men are, as they should always be, friends.

D. E.—If the Council considered such a method of approaching the public to constitute "infamous conduct in a professional respect" reprimand or suspension would follow. We are only guessing when we say that probably the Council would not take so serious a view, for the Council has unlimited discretion in dealing with such matters.

W. H. G.—There are as yet very few such institutions. In a few counties they have been started at the expense of the residents, the benefits being for the residents.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M. Ophthalmic, 2.15 P.M.).

WEDNESDAY (25th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (26th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond street (2.30 P.M.).

FRIDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.).

SATURDAY (28th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (23rd).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Surgical Papers: Mr. Mansell Moullin: A Series of Gastro-enterostomies performed for Chronic Gastric and Duodenal Ulcers.—Mr. M. Smith: Perforated Ulcer of the Duodenum.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—7 P.M. Council. 8 P.M. Inaugural Address: The President. Casual Communication:—Mr. H. J. Paterson: A Metal Inhaler removed from the Œsophagus by Gastrotomy (with skiagraph). Paper:—Mr. H. A. T. Fairbank: The Treatment of Necrosis of the Jaw.

TUESDAY (24th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Mr. J. D. Malcolm: Inflammation and Peritonitis regarded as Physiological Processes.

THERAPEUTICAL SOCIETY (Apothecaries' Hall).—4.30 P.M. Annual General Meeting. Election of Officers. Papers:—Dr. H. French: Therapeutical Aspects of the Congress on Hygiene.—Mr. T. R. Elliott: Experimental Investigation upon the Action of Adrenalin Chloride.—Dr. Steele and Dr. Plant: Adrenalin Chloride in the Treatment of Serous Effusions.

WEDNESDAY (25th).—HUNTERIAN SOCIETY (London Hospital, not at Guy's Hospital as was previously arranged).—4 P.M. Clinical Afternoon.

THURSDAY (26th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Papers:—Mr. H. Tilley: The Symptoms, Diagnosis, and Treatment of the Commoner Forms of Nasal Obstruction.—Mr. R. W. Brewerton: Extirpation of the Lachrymal Sac.

NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Clinical Evening. Patients in attendance at 8 P.M.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. General Meeting. 9 P.M. Presidential Address:—Dr. G. W. H. Cumming (Torquay): The Influence of Climate upon Old Age and Senile Diseases. Paper:—Dr. R. W. Felkin: Sea Voyages for Invalids.

CHILDHOOD SOCIETY AND THE BRITISH CHILD-STUDY ASSOCIATION (Parkes Museum, Margaret-street, W.).—8 P.M. Lecture:—Dr. C. Reddie: Some Causes of Physical, Mental, and Moral Degeneration. (Arranged by the Childhood Society.)

FRIDAY (27th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Exhibition of Clinical Cases followed by discussion. Patients will be in attendance from 8 to 9 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Clinique. (Skin.) 5.15 P.M. Dr. H. Mackenzie: Abscess of the Liver.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. J. Reece: The Dwelling House and its Surroundings (with lantern slides).

TUESDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Harris: Clinique. (Medical.) 5.15 P.M. Mr. M. Morris: The Treatment of Scars and Cheloid.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Bidwell: Operative Treatment of Chronic Gastritis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Batten: Syringomyelia.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Dr. G. F. Chappel: The Early Diagnosis of Typhoid Fever.

WEDNESDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Pardoe: Clinique. (Surgical.) 5.15 P.M. Mr. Collins: Intra-Ocular Tumours (with lantern slides).

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Bidwell: Floating Kidney.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (North-Eastern Fever Hospital, St. Ann's-road, N.).—2.30 P.M. Dr. Turner: Demonstration on Fevers.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Opening Demonstration:—Dr. Greg: Examination of the Chest by the X Rays.

THURSDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. A. Morison: The Nature and Treatment of the Attack in Spasmodic Asthma.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Ll. Williams: Pain and Swelling in the Mouth.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Mr. Malcolm: Some Points in Connexion with Appendicitis.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Mott: Demonstration of Medical Cases. (Post Graduate Course.)

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: Seborrhœa and Psoriasis dealt with as Stages of the same Dermatitis in Symptoms, Diagnosis, and Treatment. (Chesterfield Lecture.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Dr. J. B. Squire: Pulmonary Tuberculosis in Children. (Lecture II.) (Post-Graduate Course.)

WESTMINSTER HOSPITAL MEDICAL SCHOOL (University of London) (Caxton-street, Westminster, S.W.).—5 P.M. Lecture:—Dr. B. Abrahams: Applied Physiology. (Lecture III.)

FRIDAY (27th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. Tilley: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Russell: Nephritis. (Lecture II.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Sir V. Horsley: Surgery of the Nervous System.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Mr. R. P. Brooks: Diseases of the Optic Nerve.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 19th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks
Oct. 13	29·96	S.W.	...	67	56	51	53	54	Raining
,, 14	30·13	N.	0·01	82	56	37	36	40	Fine
,, 15	29·61	W.	...	65	57	40	39	40	Cloudy
,, 16	29·85	N.E.	0·11	83	49	38	37	40	Fine
,, 17	30·07	W.	...	78	50	33	34	36	Fine
,, 18	30·05	W.	...	85	54	36	38	40	Fine
,, 19	30·12	N.E.	...	79	49	39	38	40	Cloudy

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